

Overview of Trends in

Canadian
mineral

exploration



CANADIAN INTERGOVERNMENTAL WORKING GROUP ON THE MINERAL INDUSTRY

2007



Overview of Trends in

Canadian mineral exploration



Canadian Intergovernmental Working Group
on the Mineral Industry

2007

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The cover photo shows a drill rig on the Lalor Lake zinc-copper property of HudBay Minerals Inc. Located 3 km from the Chisel North mine and 15 km from the Snow Lake concentrator, in Manitoba's Flin Flon Greenstone Belt, the Lalor Lake property was initially drilled in 2007 and is currently believed to host 18-20 Mt of 7.7-8.8% zinc. Hudbay plans to spend approximately \$10.2 million in 2008 to advance the deposit.



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Preface

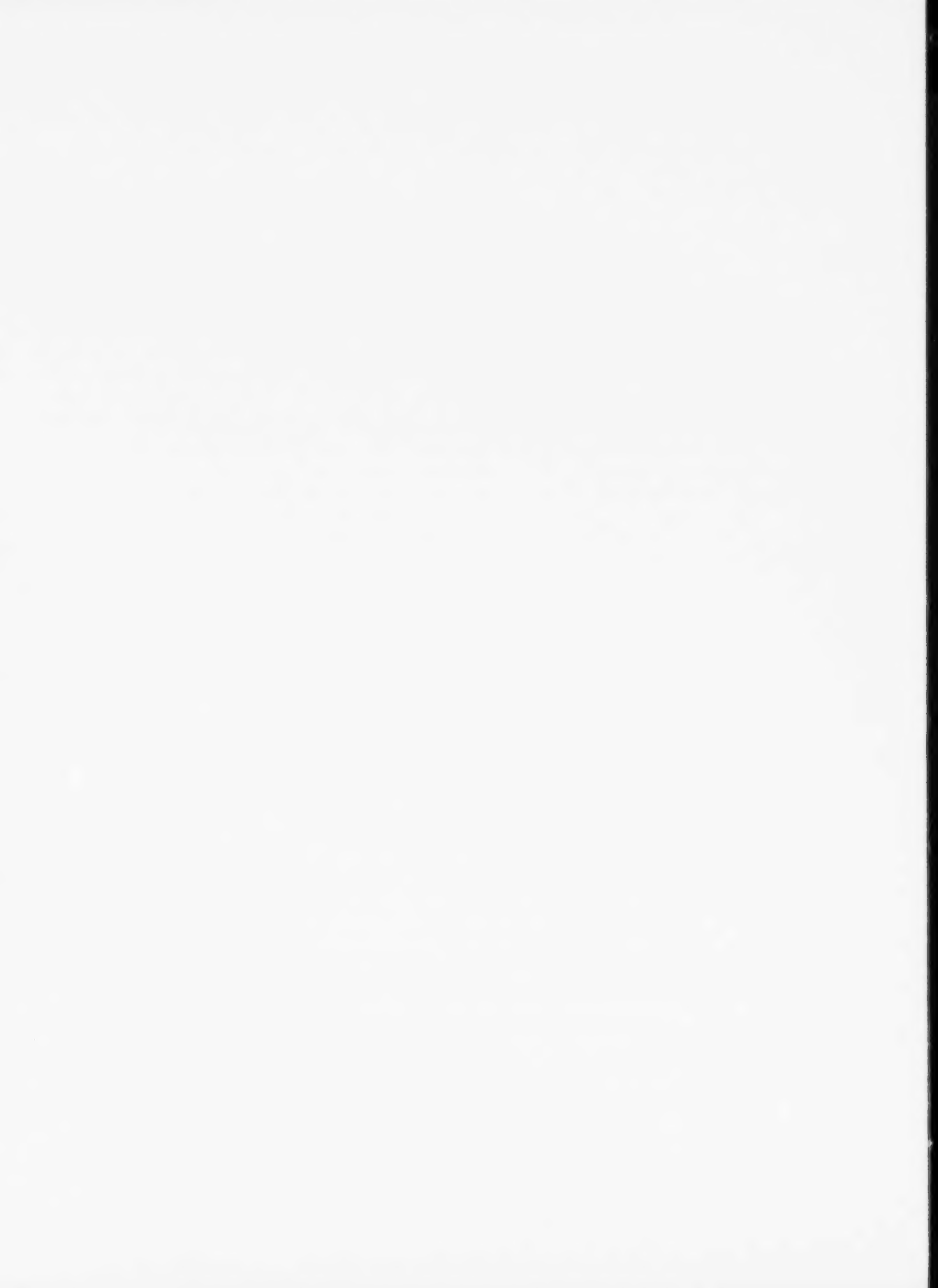
The *Overview of Trends in Canadian Mineral Exploration* report is prepared annually, on behalf of the Intergovernmental Working Group on the Mineral Industry (IGWG), for presentation to federal, provincial and territorial mines ministers. It contains an analysis of recent indicators of exploration and deposit appraisal activity in Canada, a review of the exploration and deposit appraisal sector of each province/territory, and a review of the worldwide activities of the larger Canadian exploration and mining companies. The information in this report is current as of November 2007.

The analyses, articles and reviews found in this report were prepared by officials from respective provincial/territorial departments responsible for mineral exploration and from Natural Resources Canada (NRCan). The Minerals and Metals Sector of NRCan was responsible for compiling, editing, producing and distributing this report, which covers exploration and deposit appraisal activities for metallic minerals, nonmetallic minerals, coal, and uranium. It does not refer to petroleum-related work.

The report is available on the Internet at www.nrcan.gc.ca/mms/pubs/explor_e.htm.

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Government Contacts/ Information Requests

For further information on specific issues related to this report (i.e., exploration activities and statistics, incentives and programs, rules and regulations, geoscientific data, etc.), the reader is invited to contact the appropriate federal, provincial or territorial authorities at the telephone numbers listed below or to consult their respective web sites. The contact information for officials who prepared the provincial/territorial sections is also provided at the beginning of each of these sections while the NRCan officials who participated in the preparation of this report are listed below. Prince Edward Island is not included because of a current lack of mineral exploration activity.

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- Nunavut (Iqaluit)
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Executive Summary

Statistics from the federal-provincial/territorial Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures show that 2007 represented another year of strong growth in the seven-year upward trend that brought the Canadian mineral exploration sector to record levels of activity.

Revised 2007 company spending intentions of \$2547 million represent the highest total ever for exploration and deposit appraisal expenditures in Canada. This 2007 spending forecast marks another year of strong growth as spending was expected to increase by a further 33% after year-on-year increases of 47% in 2006, 11% in 2005, and 72% in 2004. In real terms, exploration and deposit appraisal spending in Canada has now been on a strong upward trend ever since the historical trough of 2000.

The overall context remained very favourable in 2007 as prices continued to show strength across a wide range of mineral commodities, capital markets continued to view the industry favourably, and positive exploration news brought even more visibility to the sector. However, the latter part of the year saw growing concerns from industry observers about the impact of the credit situation in the United States, the prospects for continued strength in metal prices, the continued availability of equity financing, and the rising costs of exploration work. Although early indications point to another strong year in 2008, any strong enough combination of the above-mentioned factors could bring about a temporary pause or even the beginning of a downward trend after 2008.

The current growth period has been characterized by a strong focus on off-mine-site and exploration-phase spending, both inside and outside of traditional mining camps. It has also heralded the emergence of the junior mining sector as the dominant force in the Canadian mineral exploration and deposit appraisal sector. The generally favourable market outlook has led to exploration and deposit appraisal spending being widely distributed among various mineral commodity targets and regions.

The future of mining in Canada will no doubt be shaped by the discoveries, and additions to previously known resources and reserves, that will result from this period of intense activity by the Canadian mineral exploration industry. The Regional Outlook section of this report summarizes the most interesting projects currently under way in this country.

Globally, Canada continues to be the top destination for exploration capital. In 2007, some 21% of the mineral exploration programs (for precious metals, base metals, diamonds, and uranium) planned by the world's large and small companies were expected to be conducted in Canada. As for Canadian companies, they were expected to undertake almost 45% of all the exploration programs in the world in 2007, a share that is by far the largest of the global mineral exploration market.

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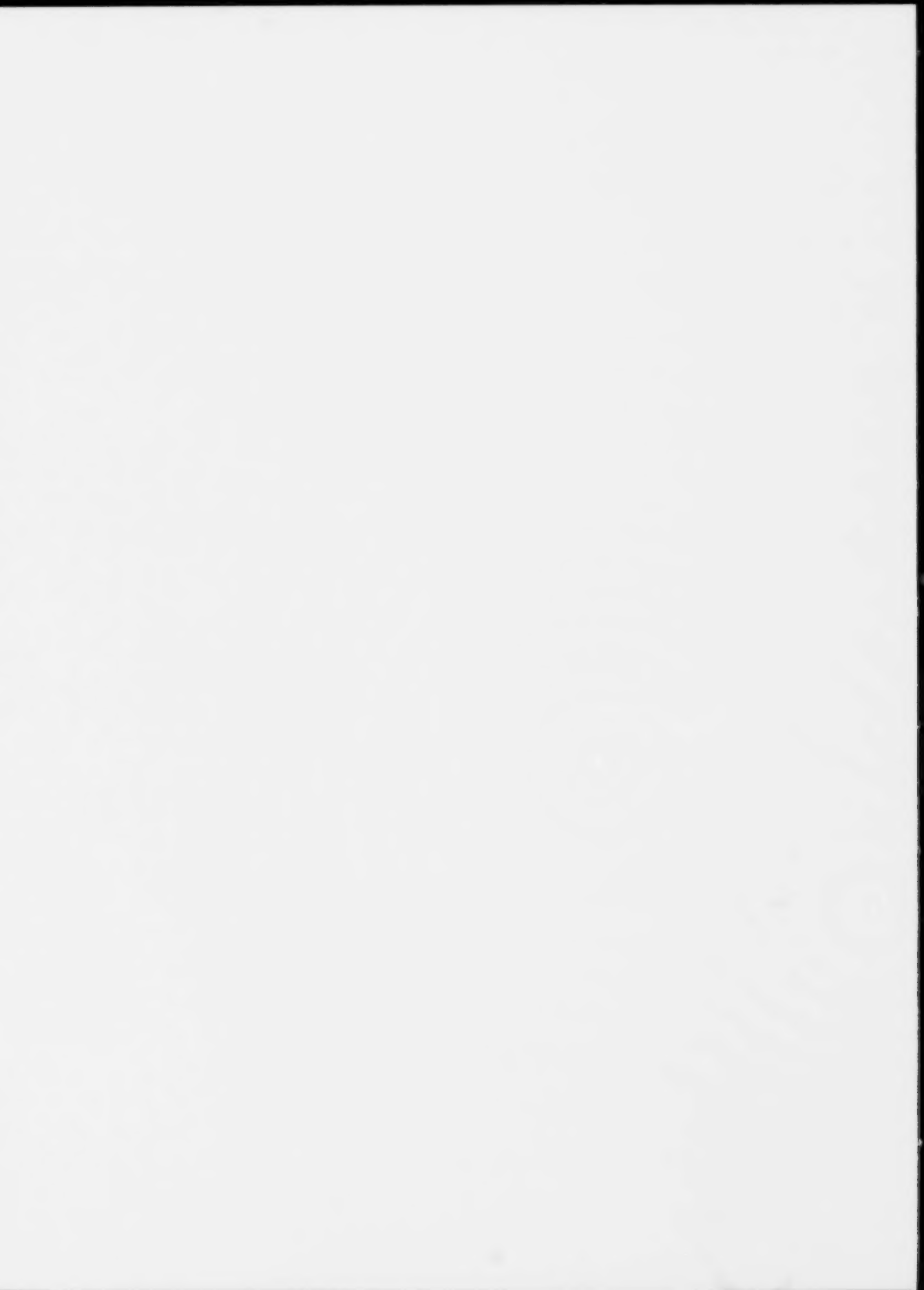
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ABBREVIATIONS

The reader should note that a number of abbreviations for common units of measurement appear in the text:

ct	carats
ct/ht	carats per hundred tonnes
ct/t	carats per tonne
g	grams
g/t	grams per tonne
ha	hectares
kg	kilograms
kJ	kilojoules
km	kilometres
km ²	square kilometres
lb	pounds
m	metres
m ³	cubic metres
Met	million carats
Mha	million hectares
mm	millimetres
Mt	million tonnes
Mt/y	million tonnes per year
oz	troy ounces
ppm	parts per million
t	tonnes (metric)
t/d	tonnes per day
t/y	tonnes per year
y	year

Note: Unless specified otherwise, all dollar figures are in Canadian dollars.



1. Indicators of Mineral Exploration and Deposit Appraisal Activity in Canada

1.1 INTRODUCTION

The first chapter of this report presents data and analysis on indicators of mineral exploration and deposit appraisal activity in Canada. Except where needed for comparing different data sets, it does not cover activities beyond the deposit appraisal stage, such as those related to mine development. The most important indicator is spending and, accordingly, most of the analysis focuses on expenditure trends and patterns. Chapter 1 also provides analysis on two other indicators of exploration and deposit appraisal activity, drilling and claim staking, as well as a discussion of the outlook for gold and base metals in 2008.

The federal-provincial/territorial Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures provides a comprehensive breakdown of the mineral development cycle in Canada. For a better understanding of the survey and its definitions, the reader is also invited to consult Section 1.2 and the *Reporting Guide for the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures*.¹

1.2 SUMMARY OF SURVEY DEFINITIONS

In the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures, often referred to as the federal-provincial/territorial survey of mining and exploration companies, the *exploration* work phase is defined as the search for, discovery and first delineation of a previously unknown mineral deposit or the re-evaluation of a sub-marginal or neglected mineral deposit in order to enhance its potential economic interest based on more appropriate tonnage and grade characteristics. This work phase is completed when a deposit has sufficient indicated mineral resources accompanied by a "preliminary economic assessment" (scoping study)² that justifies additional, more detailed, and costly deposit appraisal work. The expenditures include all field activities and support, including capital, repair and maintenance expenditures,³ carried out on- or off-mine-site.⁴

¹ More information on the federal-provincial/territorial survey is available on-line at http://mmsd1.mms.nrcan.gc.ca/mmsd/exploration/default_e.asp. The reader should note that a different set of definitions is used in Chapter 3, which contains data and analysis on worldwide exploration activity and is based on data from the Metals Economics Group.

² Compliant with guidelines from the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) and National Instrument 43-101 (NI 43-101).

³ Repair and maintenance expenditures apply only to capital assets (construction, machinery and equipment), not to field expenditures.

⁴ A mine site is the area that can be accessed and exploited from the current or committed installations. The size of this area is determined by the environmental permits obtained and varies depending on the commodity under consideration; the attitude (horizontal, inclined, vertical); the type, extent and number of the deposit(s); and the mining method(s) in use.

The *deposit appraisal* work phase is defined as the steps undertaken to bring a delineated deposit to the stage of detailed knowledge required for a bankable feasibility study that will justify and support a production decision and the investment required. The expenditures include all field activities and support, including capital, repair and maintenance expenditures,³ carried out on- or off-mine-site.⁴

Overall, the Survey allows a detailed cost breakdown of total exploration and deposit appraisal expenditures into categories that include the traditional field work and overhead costs, but also those that include costs related to engineering, economic and feasibility studies, the environment, and land access.

1.3 EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES

Levels of exploration and deposit appraisal expenditures can provide a good indication of the current state of Canada's mineral exploration sector, and some insight into the future of the country's minerals and metals production capacity. This section of the report contains an analysis of the 2006 and 2007 expenditure data.⁵ The data for 2006 are considered to be final. The data for 2007 were first compiled in January 2007 and were revised between March and September 2007. They will be finalized in 2008. This section also provides some coverage of the period 1997-2007. The analysis, figures and tables presented in this chapter are, for the most part, denominated in current Canadian dollars. However, in order to keep an inflation-free perspective, some of the longer-term comparisons are also presented in terms of 2006 constant dollars (using the Gross Domestic Product deflator series).

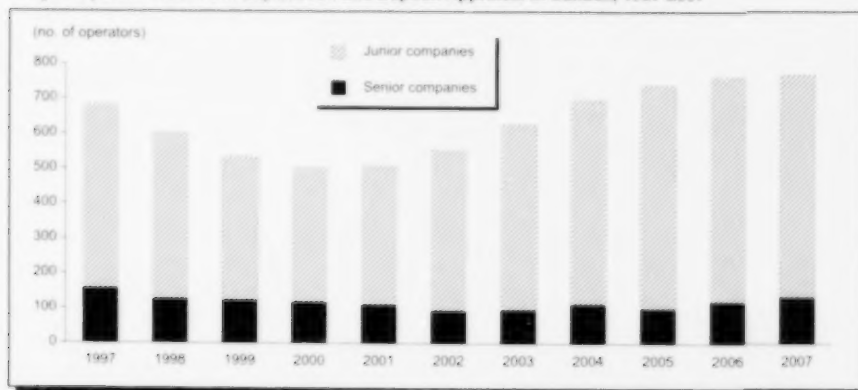
1.3.1 2006 Exploration and Deposit Appraisal Expenditures

1.3.1.1 Statistical Summary

In 2006, 768 companies (project operators) spent \$1906 million (\$1912 million when including prospectors) on mineral exploration and deposit appraisal in Canada (**Figure 1** and **Table 1**). That

⁵ For further analysis of 2006 exploration and deposit appraisal expenditures and a discussion of 2007 spending intentions, including more project-related information, see Ginette Bouchard, "Mineral Exploration, Deposit Appraisal and Mine Complex Development Activity in Canada" in the 2006 edition of the *Canadian Minerals Yearbook*, Natural Resources Canada, Ottawa.

Figure 1
Project Operators Active in Exploration and Deposit Appraisal in Canada, 1997-2007



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures

Notes: Data exclude prospectors and prospector groups. Data up to and including 2006 are final; 2007 data are based on revised company spending intentions as compiled between March and September 2007.

TABLE 1. EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES IN CANADA, (1) BY RANGE OF EXPENDITURES AND BY TYPE OF COMPANIES (PROJECT OPERATORS), 2004-07 (Current Dollars)

Range of Expenditures	Junior			Senior			Total		
	Companies (Project Operators)	Expenditures	Percentage of Total Expenditures	Companies (Project Operators)	Expenditures	Percentage of Total Expenditures	Companies (Project Operators)	Expenditures	Percentage of Total Expenditures
(\$)	(number)	(\$000)	(%)	(number)	(\$000)	(%)	(number)	(\$000)	(%)
2004									
>10 million	6	80 773	13.5	16	420 603	72.8	22	501 376	42.6
5 million-10 million	22	155 683	26.0	10	80 607	13.9	32	236 292	20.1
1 million-5 million	111	243 179	40.5	22	61 691	10.7	133	304 870	25.9
500 000-1 million	88	63 673	10.6	12	8 782	1.5	100	72 456	6.2
200 000-500 000	110	36 254	6.0	13	4 154	0.7	123	40 408	3.4
100 000-200 000	74	10 403	1.7	9	1 188	0.2	83	11 591	1.0
50 000-100 000	59	4 225	0.7	9	617	0.1	68	4 842	0.4
1-50 000	119	2 129	0.4	21	424	0.1	140	2 553	0.2
Subtotal	589	596 319	99.4	112	578 067	100.0	701	1 174 386	99.7
Prospectors (2)	13	3 399	0.6	-	-	-	13	3 399	0.3
Total 2004	602	599 718	100.0	112	578 067	100.0	714	1 177 785	100.0
2005									
>10 million	13	238 275	29.7	15	338 015	67.1	28	576 290	44.2
5 million-10 million	18	124 974	15.6	15	93 467	18.6	33	218 441	16.7
1 million-5 million	148	311 358	38.9	22	60 955	12.1	170	372 314	28.5
500 000-1 million	99	71 285	8.9	10	7 095	1.4	109	78 381	6.0
200 000-500 000	111	36 125	4.5	7	2 495	0.5	118	38 621	2.9
100 000-200 000	70	9 973	1.2	6	722	0.1	76	10 696	0.8
50 000-100 000	59	4 075	0.5	5	369	0.1	64	4 444	0.3
1-50 000	124	2 399	0.3	20	384	0.1	144	2 783	0.2
Subtotal	642	798 466	99.6	100	503 503	100.0	742	1 301 969	99.8
Prospectors (2)	11	2 821	0.4	-	-	-	11	2 821	0.2
Total 2005	653	801 287	100.0	100	503 503	100.0	753	1 304 790	100.0
2006									
>10 million	20	428 611	34.6	20	477 257	70.9	40	905 868	47.4
5 million-10 million	36	247 745	20.0	15	114 204	17.0	51	361 949	18.9
1 million-5 million	202	438 012	35.4	25	71 308	10.6	227	509 320	26.6
500 000-1 million	96	69 404	5.6	5	4 066	0.6	101	73 470	3.8
200 000-500 000	99	34 444	2.8	11	3 813	0.6	110	38 257	2.0
100 000-200 000	63	9 532	0.8	14	1 884	0.3	77	11 417	0.6
50 000-100 000	44	3 331	0.3	7	541	0.1	51	3 871	0.2
1-50 000	89	1 517	0.1	22	424	0.1	111	1 941	0.1
Subtotal	649	1 232 596	99.6	119	673 073	100.0	768	1 906 093	99.7
Prospectors (2)	13	5 434	0.4	-	-	-	13	5 434	0.3
Total 2006	662	1 238 031	100.0	119	673 073	100.0	781	1 911 527	100.0
2007									
>10 million	25	500 943	32.1	26	752 248	76.1	51	1 253 191	49.2
5 million-10 million	55	398 380	25.6	20	146 986	14.9	75	545 365	21.4
1 million-5 million	217	525 651	33.7	25	72 674	7.4	242	598 325	23.5
500 000-1 million	97	79 408	5.1	13	10 771	1.1	110	90 179	3.5
200 000-500 000	115	42 989	2.8	9	2 934	0.3	124	45 924	1.8
100 000-200 000	35	5 755	0.4	11	1 716	0.2	46	7 470	0.3
50 000-100 000	26	2 218	0.1	8	740	0.1	34	2 958	0.1
1-50 000	68	1 398	0.1	20	310	...	88	1 707	0.1
Subtotal	638	1 556 742	99.9	132	988 378	100.0	770	2 545 119	99.9
Prospectors (2)	10	2 017	0.1	-	-	-	10	2 017	0.1
Total 2007 (rsi)	648	1 558 759	100.0	132	988 378	100.0	780	2 547 136	100.0

Source: Natural Resources Canada, from a federal/provincial/territorial survey of mining and exploration companies.

- Nil, ... Amount too small to be expressed, (rsi) Revised spending intentions.

(1) Includes on-mine-site plus off-mine-site activities. Includes field work, overhead, engineering, economic and pre- or production feasibility studies, environment and land access costs. (2) The number of prospectors is underestimated because it contains groups of prospectors.

Notes: Numbers may not add to totals due to rounding. Data up to and including 2006 are final. 2007 data are based on revised company spending intentions as compiled between March and September 2007.

number of companies represented an increase of 3.5% from the 2005 total of 742 companies (expenditures of \$1302 million) and a further increase from the low of 504 project operators that was reached in 2000. A total of 318 companies (compared to 231 in 2005 and 187 in 2004) spent more than \$1 million each in 2006; these companies' expenditures accounted for 93% of the total expenditures for that year. On an annual basis, projects with spending of \$1 million or more usually account for most of the total expenditures (80% or more). However, in this period of intense exploration activity, substantial amounts have been invested on a per-project basis, notwithstanding inflation in exploration costs resulting from a limited availability of services and equipment providers.

The resounding 46% increase (+\$607 million) in exploration and deposit appraisal spending that occurred between 2005 and 2006 was felt throughout the country except for Manitoba, which saw its spending remain constant at \$53 million (**Figure 2** and **Table 2**). In dollar terms, British Columbia (+\$126 million), Saskatchewan (+\$102 million), and Québec (+\$90 million) recorded the largest increases over 2005. Ontario (\$347 million), British Columbia (\$344 million), Québec (\$295 million), Saskatchewan (\$236 million), and Nunavut (\$211 million) all recorded spending above the \$200 million mark. Together these five jurisdictions accounted for 75% of total spending in 2006.

Expenditures for off-mine-site exploration and deposit appraisal activity increased by 49% (to \$1769 million) from the 2005 level of \$1184 million (**Figure 3a**). In constant 2006 dollars, this was the sixth consecutive increase in off-mine-site spending (**Figure 3b**). Overall, 93% of all exploration and deposit appraisal expenditures in 2006 was for off-mine-site activity. As will be discussed in the next section, the main component of off-mine-site spending, the off-mine-site exploration work phase, has been on a strong increasing trend since 2000. British Columbia overtook Ontario as the leading Canadian jurisdiction for off-mine-site spending with 19% (\$330 million) of the total for that category, followed by Ontario and Québec with 15% each (\$271 million and \$265 million, respectively) (**Figure 4**).

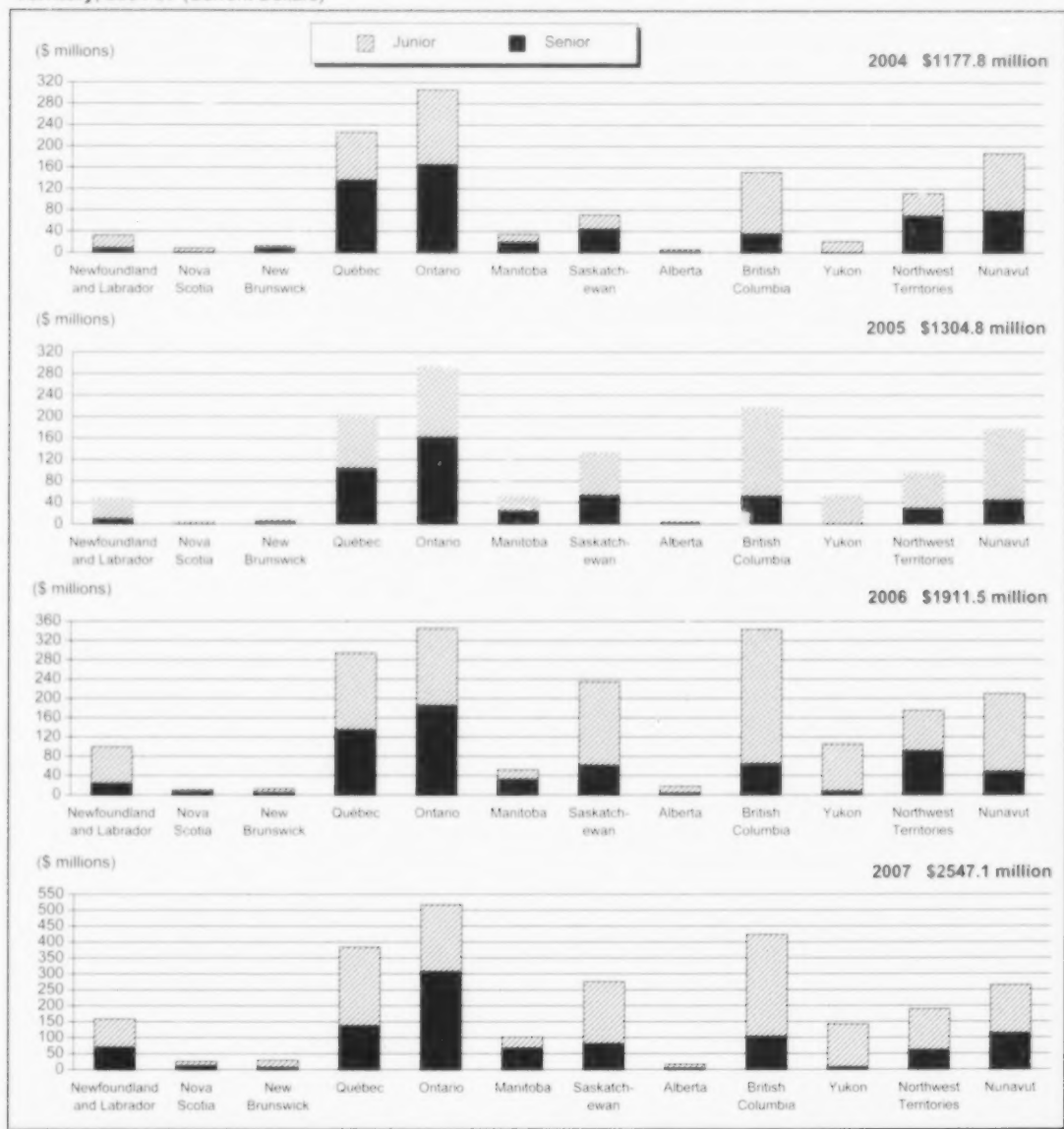
Once again, on-mine-site exploration and deposit appraisal spending failed to match the growing trend in off-mine-site expenditures. This type of spending amounted to \$143 million in 2006. This total remains below the more robust on-mine-site spending that took place in 1997, the first year of the current survey format, when this type of expenditures amounted to \$204 million in constant 2006 dollars (**Figure 3b**). On-mine-site spending totals are based on a smaller number of projects and tend to fluctuate more widely as projects are dropped or moved to a later stage of the mineral resource development cycle (sometimes in a relatively short time frame). This has certainly been the case in this period of intense activity where more expenditures have been recorded in the mine complex development category (**Table 3**). Still, the apparent lack of effort for on-mine-site exploration and deposit appraisal in a period of strong metal prices underlines the seriousness of the declining reserves issue (**Table 4**) and highlights the fact that a number of Canada's better known mines are nearing the end of their lives.⁶

Manitoba and Ontario recorded the highest proportion of on-mine-site spending with 23% and 22%, respectively, of their total exploration and deposit appraisal expenditures. In dollar terms, the bulk of on-mine-site spending in Canada in 2006 occurred in Ontario with \$76 million. Québec was a distant second with \$30 million, while British Columbia and Manitoba recorded respective totals of \$14 million and \$12 million.

⁶ For a discussion on the state of Canada's ore reserves, see Alan Reed, "Canadian Reserves of Selected Major Metals and Recent Production Decisions" in the 2006 edition of the *Canadian Minerals Yearbook*, Natural Resources Canada, Ottawa.

Figure 2

Exploration and Deposit Appraisal Expenditures in Canada, by Type of Company and by Province and Territory, 2004-07 (Current Dollars)



Sources: Natural Resources Canada and Statistics Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

Notes: Exploration and deposit appraisal activities include only the search for and appraisal of new deposits; they do not include work for extensions of deposits already being mined or committed to production. Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site costs incurred for field work and overhead, plus engineering, economic and feasibility studies, environment and land access costs. Data up to and including 2006 are final; 2007 data are revised company spending intentions as compiled between March and September 2007.

TABLE 2. EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES IN CANADA, BY PROVINCE AND TERRITORY, 2004-07 (Current Dollars)

Province/Territory	2004		2005		2006		2007 (rsi)	
	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)
Newfoundland and Labrador	33.2	2.8	48.7	3.7	100.8	5.3	160.0	6.3
Nova Scotia	9.1	0.8	6.5	0.5	11.1	0.6	26.9	1.1
New Brunswick	13.4	1.1	10.1	0.8	13.4	0.7	30.5	1.2
Québec	227.2	19.3	205.1	15.4	295.1	15.4	385.3	15.1
Ontario	306.9	26.1	294.0	22.5	346.5	18.1	519.2	20.4
Manitoba	36.0	3.1	52.9	4.0	52.9	2.8	103.1	4.1
Saskatchewan	71.8	6.1	133.9	10.1	235.6	12.3	277.4	10.9
Alberta	6.3	0.5	6.6	0.5	18.7	1.0	17.4	0.7
British Columbia	151.9	12.9	218.1	16.4	344.2	18.0	425.2	16.7
Yukon	22.0	1.9	54.0	4.1	106.4	5.6	143.9	5.7
Northwest Territories	112.4	9.5	96.3	7.3	176.2	9.2	191.6	7.5
Nunavut	187.5	15.9	178.7	13.5	210.6	11.0	266.7	10.5
Total	1 177.8	100	1 304.8	100	1 911.5	100.0	2 547.1	100.0
Exploration	903.5	76.7	1 119.9	84.3	1 503.7	78.7	2 004.1	78.7
Deposit appraisal	274.3	23.3	184.9	15.7	407.9	21.3	543.0	21.3

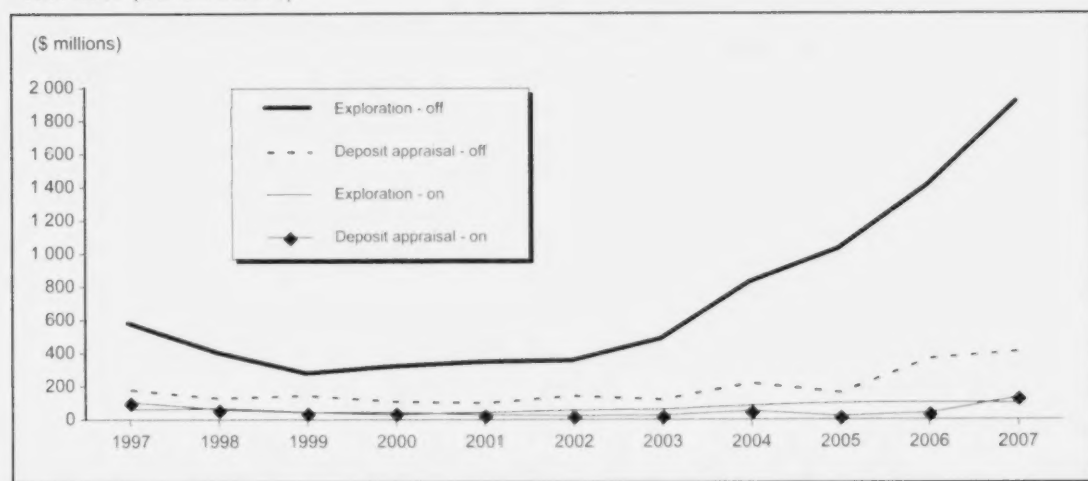
Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(rsi) Revised spending intentions.

Notes: Data up to and including 2006 are final; 2007 data are based on revised spending intentions as compiled between March and September 2007.

Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site costs incurred for field work and overhead, plus engineering, economic and feasibility studies, environment and land access costs. Numbers may not add to totals due to rounding.

Figure 3a
On-Mine-Site and Off-Mine-Site Exploration and Deposit Appraisal Expenditures (1) in Canada, 1997-2007 (Current Dollars)

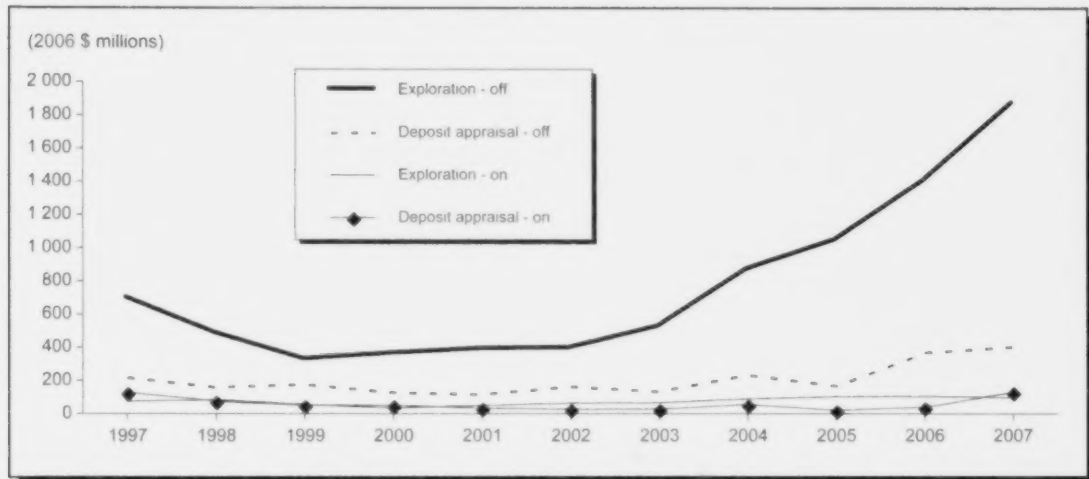


Source: Natural Resources Canada, from the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) On-mine-site and off-mine-site exploration and deposit appraisal expenditures include field work and overhead costs, plus engineering, economic and feasibility studies, environment and land access costs.

Note: Data up to and including 2006 are final; 2007 data are revised company spending intentions as compiled between March and September 2007.

Figure 3b
On-Mine-Site and Off-Mine-Site Exploration and Deposit Appraisal Expenditures (1) in Canada, 1997-2007 (Constant Dollars)



Source: Natural Resources Canada, from the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) On-mine-site and off-mine-site exploration and deposit appraisal expenditures include field work and overhead costs, plus engineering, economic and feasibility studies, environment and land access costs.

Note: Data up to and including 2006 are final; 2007 data are revised company spending intentions as compiled between March and September 2007.

1.3.1.2 Spending by Work Phase

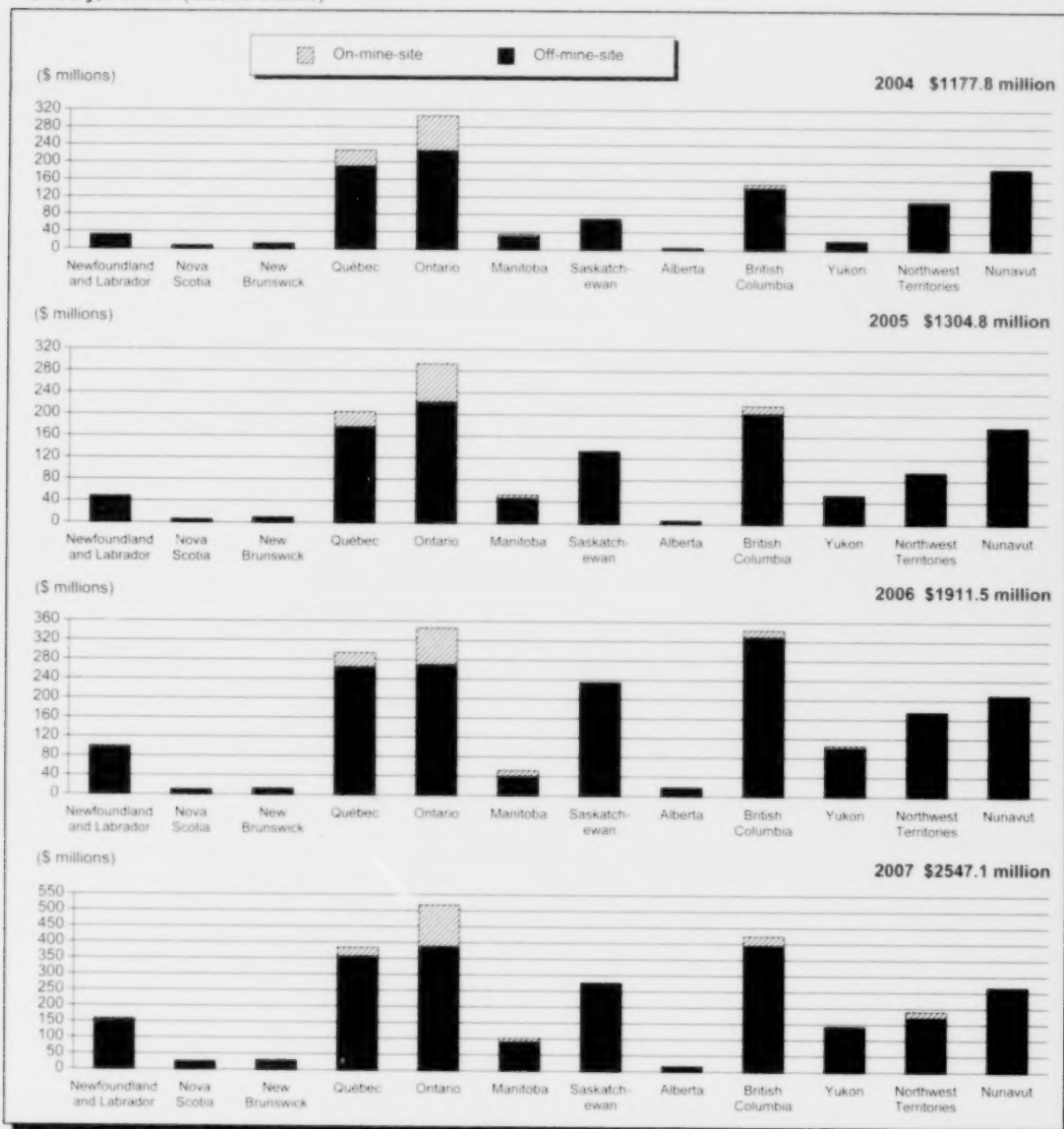
A breakdown of spending by work phase (exploration and deposit appraisal) shows that expenditures dedicated to the exploration work phase grew again in 2006. This type of expenditure rose by another 34% to reach \$1504 million (79% of total exploration and deposit appraisal spending for the year). In 2005, that proportion had been 86%. Therefore, spending on the deposit appraisal phase increased not only in terms of spending (to \$408 million from \$185 million in 2005), but also in terms of importance within the mineral development cycle (**Figures 5a** and **5b, Table 3**). Furthermore, there are indications (such as average spending per project, and the types of work undertaken and described on survey questionnaires) that a significant and growing portion of exploration-phase work occurs close to the margin separating the exploration phase from the deposit appraisal phase.

Off-mine-site spending of \$1400 million represented 93% of total spending in the exploration work phase in 2006 (**Figure 3a**). Over the period 1997-2006, off-mine-site spending has consistently represented over 85% of total exploration-phase expenditures (**Figure 3b**). In terms of deposit appraisal expenditures, approximately 90% of the \$408 million recorded for off- and on-mine-site deposit appraisal activities in 2006 was reported as off-mine-site spending.

A provincial/territorial breakdown of exploration and deposit appraisal expenditures reveals that all recorded spending in 2006 in New Brunswick and Manitoba was reported as exploration-phase work (**Figure 6**). Virtually all of Saskatchewan's \$235 million in spending was also reported as exploration-phase work as major investments at diamond projects still met the exploration-phase criteria. In fact, all Canadian mining jurisdictions recorded greater spending on exploration-type work than they did for deposit appraisal activities, although the latter accounted for 48% of spending in the Northwest Territories and 35% in British Columbia.

Figure 4

On-Mine-Site and Off-Mine-Site Exploration and Deposit Appraisal Expenditures in Canada, by Province and Territory, 2004-07 (Current Dollars)



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

Notes: Exploration and deposit appraisal activities include only the search for and appraisal of new deposits; they do not include work for extensions of deposits already being mined or committed to production. Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site costs incurred for field work and overhead, plus engineering, economic and feasibility studies, environment and land access costs. Data up to and including 2006 are final. 2007 data are revised company spending intentions as compiled between March and September 2007.

TABLE 3. EXPLORATION, DEPOSIT APPRAISAL AND MINE COMPLEX DEVELOPMENT EXPENDITURES IN CANADA, (1) 2005 AND 2006
(Current Dollars)

Expenditure Category	Exploration		Deposit Appraisal		Exploration Plus Deposit Appraisal		Mine Complex Development		Grand Total	
	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
	(\$'000)									
Field work and overhead (2)	1 050 689	1 433 671	140 265	236 176	1 190 954	1 669 846	983 323	1 009 622	2 174 277	2 679 469
Engineering, economic and pre- or production feasibility studies	51 399	40 745	26 581	127 152	77 980	167 898	64 855	48 031	142 836	215 928
Environment	16 580	27 397	17 253	41 322	33 833	68 718	72 345	77 314	106 178	146 032
Land access	1 245	1 867	779	3 198	2 024	5 065	10 831	13 565	12 854	18 630
Subtotal	1 119 913	1 503 680	184 878	407 847	1 304 790	1 911 527	1 131 354	1 148 532	2 436 145	3 060 059
Off-mine-site (3)	1 019 840	1 400 118	164 097	368 690	1 183 937	1 768 808	n.a.	n.a.	1 183 937	1 768 808
On-mine-site (3)	100 073	103 562	20 780	39 157	120 853	142 719	1 131 354	1 148 532	1 252 207	1 291 251
Capital (4)	29 641	32 992	122 732	85 457	152 373	118 450	2 426 542	3 188 467	2 578 916	3 306 916
\$ for environmental protection and restoration (5)	147	502	-	-	147	502	47 523	24 973	47 670	25 475
Total	1 149 554	1 536 672	307 609	493 304	1 457 164	2 029 977	3 605 419	4 336 999	5 015 060	6 366 975
Repair and maintenance (4)	3 438	5 995	37 231	20 189	40 669	26 184	1 412 364	1 527 738	1 453 033	1 553 923
\$ for environmental protection and restoration (5)	2	1 204	7	95	9	1 299	55 523	17 634	55 532	18 933
Grand total	1 152 992	1 542 668	344 841	513 493	1 497 833	2 056 161	4 970 260	5 864 737	6 468 093	7 920 898
Total environment	16 729	29 103	17 260	41 417	33 988	70 519	175 391	119 920	209 379	190 440
Environment as a percentage of grand total	1.5	1.9	5.0	8.1	2.3	3.4	3.5	2.0	3.2	2.4

Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

- Nil, n.a. Not applicable.

(1) Includes on-mine-site plus off-mine-site activities; exploration and deposit appraisal activities include only the search for and appraisal of deposits and do not include work for extensions of known reserves. (2) Overhead expenditures include mineral leases and claims, and project-related head office expenditures. (3) Amount of exploration and deposit appraisal expenditures dedicated to off-mine-site and on-mine-site activities. (4) Includes construction, and machinery and equipment expenditures. (5) As part of capital expenditures or repair and maintenance expenditures.

Notes: Numbers may not add to totals due to rounding. Data for 2005 and 2006 are final.

TABLE 4. CANADIAN RESERVES OF SELECTED MAJOR METALS AS AT DECEMBER 31 OF EACH YEAR, 1977-2006

Metal Contained in Proven and Probable Mineable Ore (1) in Operating Mines (2) and Deposits Committed to Production

Year	Copper	Nickel	Lead	Zinc	Molybdenum	Silver	Gold (3)
	(000 t)	(000 t)	(000 t)	(000 t)	(000 t)	(t)	(t)
1977	16 914	7 749	8 954	26 953	369	30 991	493
1978	16 184	7 843	8 930	26 721	464	30 995	505
1979	16 721	7 947	8 992	26 581	549	32 124	575
1980	16 714	8 348	9 637	27 742	551	33 804	826
1981	15 511	7 781	9 380	26 833	505	32 092	851
1982	16 889	7 546	9 139	26 216	469	31 204	833
1983	16 214	7 393	9 081	26 313	442	31 425	1 172
1984	15 530	7 191	9 180	26 000	361	30 757	1 208
1985	14 201	7 041	8 503	24 553	331	29 442	1 373
1986	12 918	6 780	7 599	22 936	312	25 914	1 507
1987	12 927	6 562	7 129	21 471	231	25 103	1 705
1988	12 485	6 286	6 811	20 710	208	26 122	1 801
1989	12 082	6 092	6 717	20 479	207	24 393	1 645
1990	11 261	5 776	5 643	17 847	198	20 102	1 542
1991	11 040	5 691	4 957	16 038	186	17 859	1 433
1992	10 755	5 605	4 328	14 584	163	15 974	1 345
1993	9 740	5 409	4 149	14 206	161	15 576	1 333
1994	9 533	5 334	3 861	14 514	148	19 146	1 513
1995	9 250	5 832	3 660	14 712	129	19 073	1 540
1996	9 667	5 623	3 450	13 660	144	18 911	1 724
1997	9 032	5 122	2 344	10 588	149	16 697	1 510
1998	8 402	5 683	1 845	10 159	121	15 738	1 415
1999	7 761	4 983	1 586	10 210	119	15 368	1 326
2000	7 419	4 782	1 315	8 876	97	13 919	1 142
2001	6 666	4 335	970	7 808	95	12 593	1 070
2002	6 774	4 920	872	6 871	82	11 230	1 023
2003	6 037	4 303	749	6 251	78	9 245	1 009
2004	5 546	3 846	667	5 299	80	6 568	787
2005	6 589	3 960	552	5 063	95	6 684	965
2006	6 923	3 940	737	6 055	101	6 873	1 032

Source: Natural Resources Canada, based on company reports and the Federal-Provincial/Territorial Survey of Mines and Concentrators.

(1) No allowance is made for losses in milling, smelting and refining. Excludes material classified as "resources."

(2) Includes metal in mines where production has been suspended temporarily. (3) Excludes metal in placer deposits because reserves data are generally unavailable.

Note: One tonne (t) = 1.1023113 short tons = 32 150.746 troy oz.

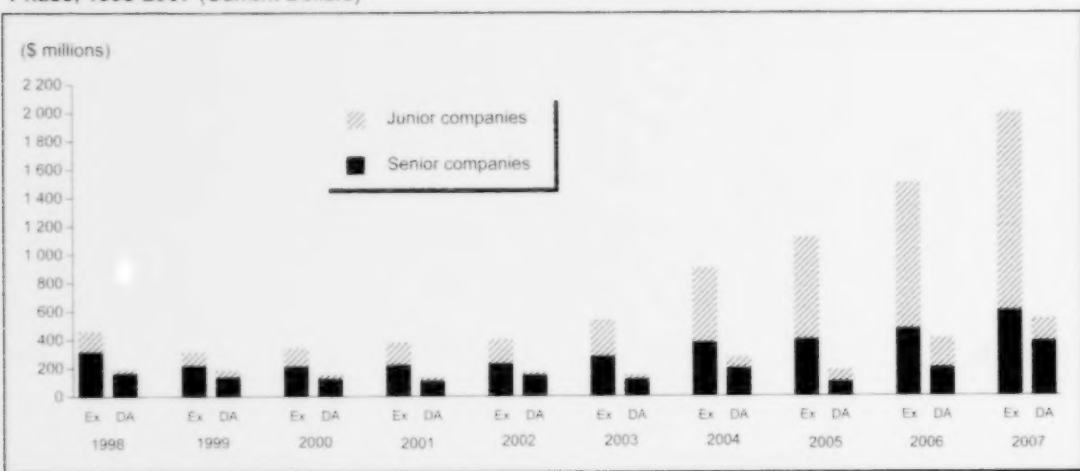
In terms of ranking by total exploration expenditures, Ontario ranked first with \$263 million, followed by Québec (\$240 million), Saskatchewan (\$233 million), British Columbia (\$222 million), and Nunavut (\$184 million). Together these five jurisdictions accounted for 76% of all exploration-phase expenditures in Canada in 2006.

On the deposit appraisal scene, the leaders, in dollar terms, were British Columbia (\$122 million), the Northwest Territories (\$84 million), Ontario (\$83 million), Québec (\$55 million), and Nunavut (\$27 million).

1.3.1.3 Spending by Type of Activity

A detailed cost breakdown for each of the exploration and deposit appraisal work phases confirms that drilling (surface and underground) is the most important cost component in the discovery and delineation of a mineral deposit (Figure 7). In 2006, surface and underground drilling (diamond drilling and other types of drilling) accounted for 53% (\$794 million) of the \$1504 million spent on the exploration work phase. As can be expected, surface drilling accounted for most of the exploration-related drilling activity with 94% of the \$794 million spent on such work. Geoscientific surveys (geology, geochemistry and geophysics) represent the other important cost component in

Figure 5a
Exploration and Deposit Appraisal Expenditures in Canada, by Type of Company and by Work Phase, 1998-2007 (Current Dollars)

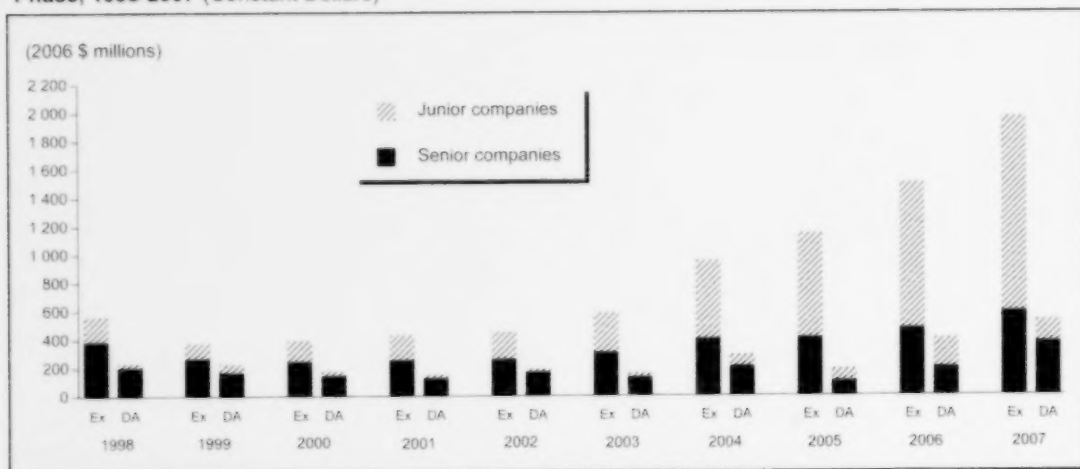


Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

Ex: Exploration; DA: Deposit appraisal.

Notes: Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site field and overhead expenditures, plus engineering, economic and feasibility studies, environment and land access costs. Data up to and including 2006 are final; 2007 data are revised company spending intentions as compiled between March and September 2007.

Figure 5b
Exploration and Deposit Appraisal Expenditures in Canada, by Type of Company and by Work Phase, 1998-2007 (Constant Dollars)



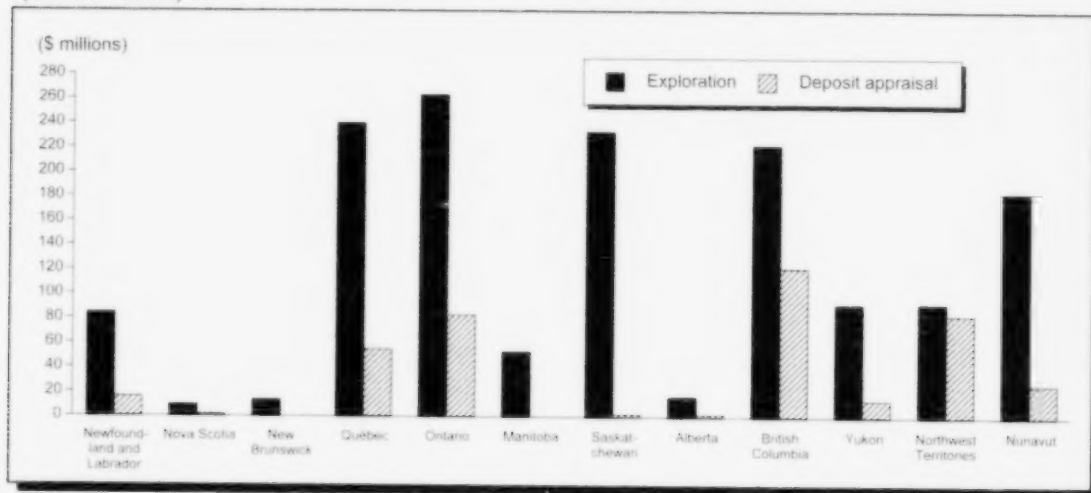
Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

Ex: Exploration; DA: Deposit appraisal.

Notes: Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site field and overhead expenditures, plus engineering, economic and feasibility studies, environment and land access costs. Data up to and including 2006 are final; 2007 data are revised company spending intentions as compiled between March and September 2007.

Figure 6

Exploration and Deposit Appraisal Expenditures in Canada, by Province and Territory, 2006
(Current Dollars)



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures

Notes: Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site field and overhead expenditures, plus engineering, economic and feasibility studies, environment and land access costs. Data for 2006 are final

that work phase. In 2006, 27% (\$410 million) of all exploration-phase spending was recorded under the geoscientific surveys cost category.

In the deposit appraisal phase, surface and underground drilling accounted for 21% (\$86 million) of the total \$408 million spent in 2006, third behind the engineering, economic, pre- and production feasibility studies category (31%, \$127 million) and the rock work category (25%, \$102 million).

Overall, surface and underground drilling accounted for 46% (\$879 million) of all exploration and deposit appraisal spending in 2006, while geoscientific surveys ranked second with 22% (\$424 million).

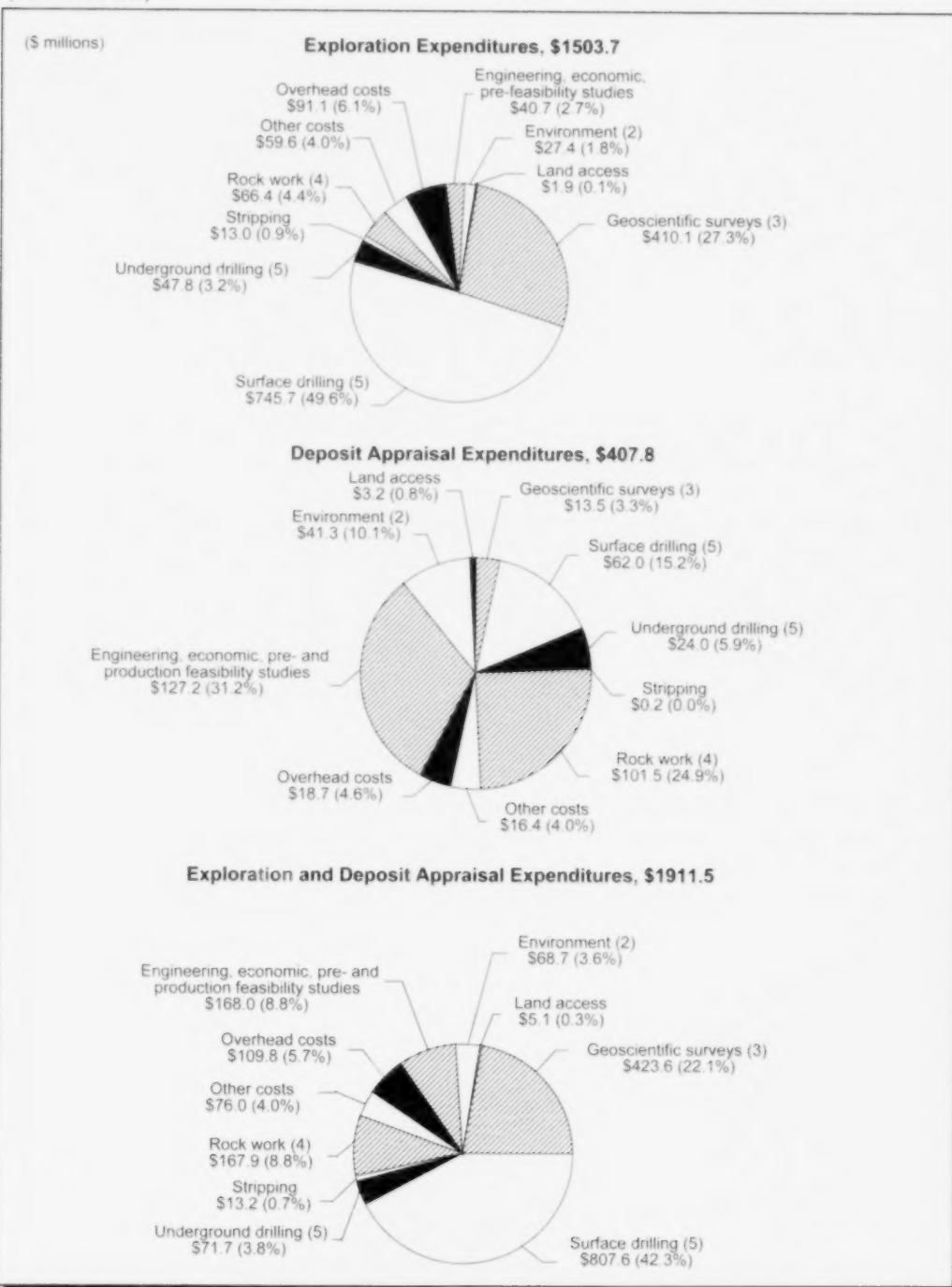
Among the other costs categories included in the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures, those of environment and land access can be of interest to various stakeholder groups, including non-governmental organizations, industry associations, and Aboriginal communities.

In 2006, a total of \$69 million was reported by survey respondents as environment-related expenditures, which include costs incurred for characterization, permitting, protection, monitoring, and restoration. This total represents 3.6% of all exploration and deposit appraisal expenditures reported for that year. These environment-related expenditures were split approximately 60%-40% in favour of the deposit appraisal phase, a distribution reflecting the increasing importance of such work in projects moving forward in the mineral development spectrum. For instance, environment-related costs (including capital, repair and maintenance) in the mine complex development category amounted to \$175 million in 2005 and \$120 million in 2006 (Table 3).

Similar to environmental costs, land access costs (which include costs incurred for impact and benefits and socio-economic agreements, rights of way, damages, and permits, but do not include acquisition costs) only account for a small fraction of total exploration and deposit appraisal expenditures. In 2006, these costs represented only 0.3% (\$5 million) of total exploration and deposit appraisal

Figure 7

Exploration and Deposit Appraisal Expenditures in Canada, (1) by Type of Work, 2006
(Current Dollars)



Source: Natural Resources Canada, from a federal-provincial/territorial survey of mining and exploration companies.

(1) Includes on-mine-site plus off-mine-site activities. (2) Environment includes characterization, permitting, protection, monitoring, and restoration. (3) Geoscientific surveys include geology, geochemistry, ground geophysics, and airborne geophysics. (4) Rock work activity includes shaft work, drifts, cross-cuts, raises, declines, and dewatering costs. (5) Drilling includes diamond and other types of drilling.

expenditures. However, land access costs also increase substantially at the mine complex development stage and beyond as items such as impact and benefits agreements come into play.

Industry representations to obtain clarification of the tax treatment for community consultation (land access) and environmental costs indicate that these two cost categories may in fact be more substantial than what companies themselves have reported in the survey. This issue was studied by a sub-working group on taxation of the Intergovernmental Working Group on the Mineral Industry (IGWG) on behalf of Canada's mines ministers and was addressed to industry's satisfaction in a September 2007 letter to the Prospectors and Developers Association of Canada from the Canada Revenue Agency. Hence, for the purpose of this publication, the reader should be aware that both environmental and land access costs may be underestimated.

1.3.1.4 Spending by Type of Company

The analyses within this report often distinguish between senior and junior companies. In general terms, a senior company derives its income from mining or other business ventures and can direct part of that income towards its exploration and deposit appraisal projects. Junior companies, on the other hand, usually have no regular source of income and must finance their projects through the issuance of shares.

In 2006, 119 senior project operators accounted for 35% (\$673 million) of all exploration and deposit appraisal expenditures in Canada (**Figures 1 and 2**). About 70% of total senior spending was allocated to exploration activities, with the remaining 30% going to deposit appraisal work (**Figure 5a**). The distribution of senior project operators by range of spending was once again skewed towards the higher spending intervals in 2006 with 60 senior project operators recording expenditures above the \$1 million level and 20 of these falling in the more than \$10 million category (**Table 1**). In fact, these 20 senior projects operators averaged spending of \$23.9 million. About 71% (\$479 million) of the expenditures reported by senior firms in 2006 were incurred in Ontario, Québec, the Northwest Territories, and British Columbia (in decreasing order) (**Figure 2**).

The number of junior project operators reached 649 in 2006, a small increase from the 642 recorded in 2005 and a weak continuation of the increasing trend that began in 2001 (**Figure 1 and Table 1**). Altogether, these junior companies (along with prospectors) spent \$1238 million on exploration and deposit appraisal in 2006, a strong 55% increase over the \$801 million they spent in 2005. This very significant improvement in junior company spending comes on the heels of other major gains in the period 1999-2005, especially in the latter years. Even when accounting for the time value of money, 2006 junior company exploration and deposit appraisal expenditures are more than seven times their value of 1999 (**Figure 5b**).

Junior company expenditures amounted to an impressive \$279 million in British Columbia in 2006. Large amounts of junior company spending were also recorded in Saskatchewan (\$174 million), Nunavut (\$162 million), Ontario (\$160 million), and Québec (\$160 million) (**Figure 2**). Together these five jurisdictions accounted for three quarters of all junior spending in Canada in 2006.

For that same year, junior company spending most frequently fell in the \$1 million-\$5 million spending interval (**Table 1**). In fact, with 202 projects in the \$1 million-\$5 million range, 36 in the \$5 million-\$10 million range, and 20 with spending of more than \$10 million, junior companies were clearly managing the vast majority of the larger exploration and deposit appraisal projects in Canada.

The continued growth and strong performance of Canada's junior mining sector coincides with exceptional market conditions across a broad range of commodities, the continued availability of federal and provincial/territorial incentives, and a receptive investment community providing the funds needed to sustain this intense period of activity.

1.3.1.5 Spending by Type of Commodity Sought

The federal-provincial/territorial survey provides a breakdown of exploration and deposit appraisal spending statistics by type of commodity sought. **Figure 8a** shows such a breakdown for the groups of commodities or individual commodities most explored for in Canada: precious metals, base metals, diamonds, uranium, and "others."

As a result of declining prices, exploration and deposit appraisal spending for precious metals (mostly gold) decreased significantly between 1997 and 2001. In constant 2006 dollars, precious-metals spending dropped from \$492 million in 1997 to \$190 million in 2001 (**Figure 8b**). For base metals, the downward trend was of an even longer duration. Starting with a 1997 total of \$347 million (constant 2006 dollars), base-metal spending spiralled down to \$150 million in 2003.

In 2002, precious-metals expenditures recovered somewhat by increasing to \$240 million (constant 2006 dollars). As a result of an improving gold price outlook, precious-metals spending increased drastically in subsequent years to reach \$346 million in 2003, \$575 million in 2004, and \$548 million in 2005 (all in constant 2006 dollars). Precious-metals spending increased to \$725 million in 2006.

For base metals, a revamped exploration effort led to expenditures of \$255 million in 2004, \$311 million in 2005, and \$412 million in 2006. Now ahead of diamonds in terms of the most sought after commodity group after precious metals, base metals appear to be finally responding to the positive market outlook. The amount of success achieved in this renewed base-metal exploration effort will be important in shaping the future of the Canadian base-metals industry, which is currently facing the major challenge of declining ore reserves (**Table 4**).

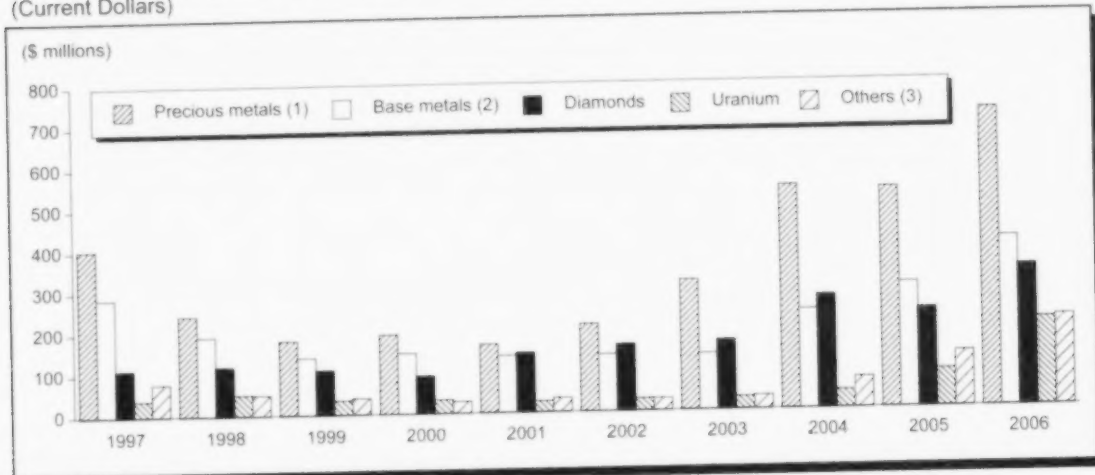
Mirroring the other major commodity groups, the search for diamonds picked up in 2006 with spending of \$342 million (**Figure 9**). In constant dollar terms, this was the highest total recorded since the current survey format was adopted in 1997. The Northwest Territories accounted for 37% (\$125 million) of that total, but significant diamond exploration activities also took place in Saskatchewan (\$97 million), Nunavut (\$47 million), Ontario (\$34 million), and Québec (\$29 million).

After more than doubling from 2004 to 2005, uranium expenditures increased by 134% in 2006 to reach an impressive \$214 million. In addition to the well-known Athabasca Basin in Saskatchewan, a number of other uranium plays have caught the interest of explorationists trying to take advantage of the favourable uranium market. As indicated in the next section of this report, other regions receiving attention for the discovery of uranium include: the Central Mineral Belt in Newfoundland and Labrador; the Otish mountains in Québec; the Elliot Lake region and Sibley Basin, both in Ontario; the Wernecke Mountains in the Yukon; and the Thelon, Baker and Hornby basins in the Northwest Territories and Nunavut.

In the "other" category, strong showings by the ferrous metals (iron ore in Nunavut, Newfoundland and Labrador, and Québec) and coal (in British Columbia) pushed spending for that commodity group to a 2005 peak of \$135 million. In 2006, this peak was shattered by a significant 63% increase (to \$219 million) that was fueled not only by continued interest in iron ore, but also by the increasing attractiveness of commodities such as molybdenum, antimony, tungsten, and cobalt.

Table 5 combines information on both the types of companies conducting exploration and deposit appraisal activities and the types of commodities sought by these companies. In 2006, precious metals continued to be the favourite target of senior companies with total spending of \$232 million (\$56 million more than in 2005). Base metals were second with expenditures of \$169 million, an increase of \$36 million over the previous year. During 2006, senior companies also spent more on the search for diamonds, with \$139 million spent compared to \$92 million in 2005. In a year where most commodities had favourable market outlooks, senior companies also increased their spending for uranium and other metals. However, in all commodity groups, junior companies outspent senior companies by significant margins.

Figure 8a
Exploration and Deposit Appraisal Expenditures in Canada, by Commodity Sought, 1997-2006
 (Current Dollars)

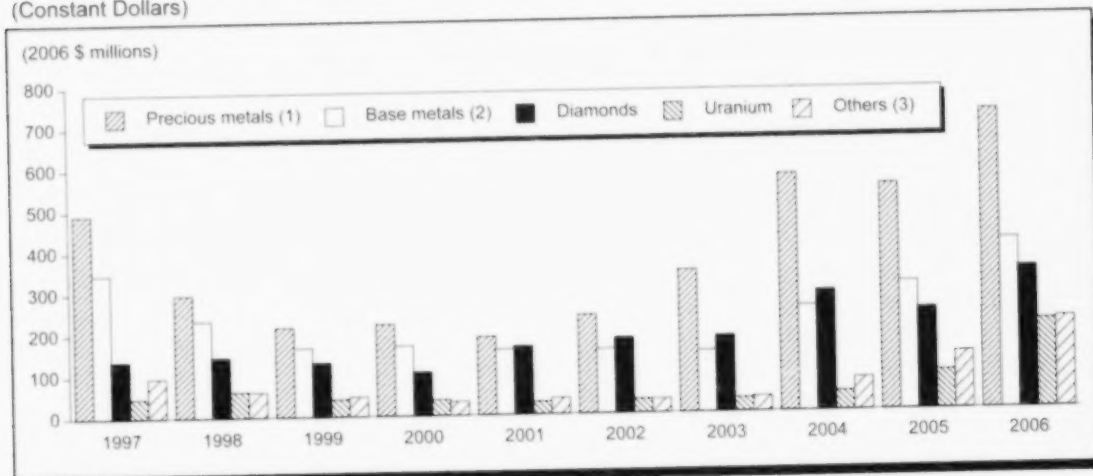


Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) Includes gold, silver, and platinum group metals. (2) Includes copper, nickel, lead, and zinc. (3) Includes ferrous metals, other metals, and nonmetals (including coal).

Notes: Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site field and overhead expenditures, plus engineering, economic and feasibility studies, environment and land access costs. Data for 2006 are final.

Figure 8b
Exploration and Deposit Appraisal Expenditures in Canada, by Commodity Sought, 1997-2006
 (Constant Dollars)

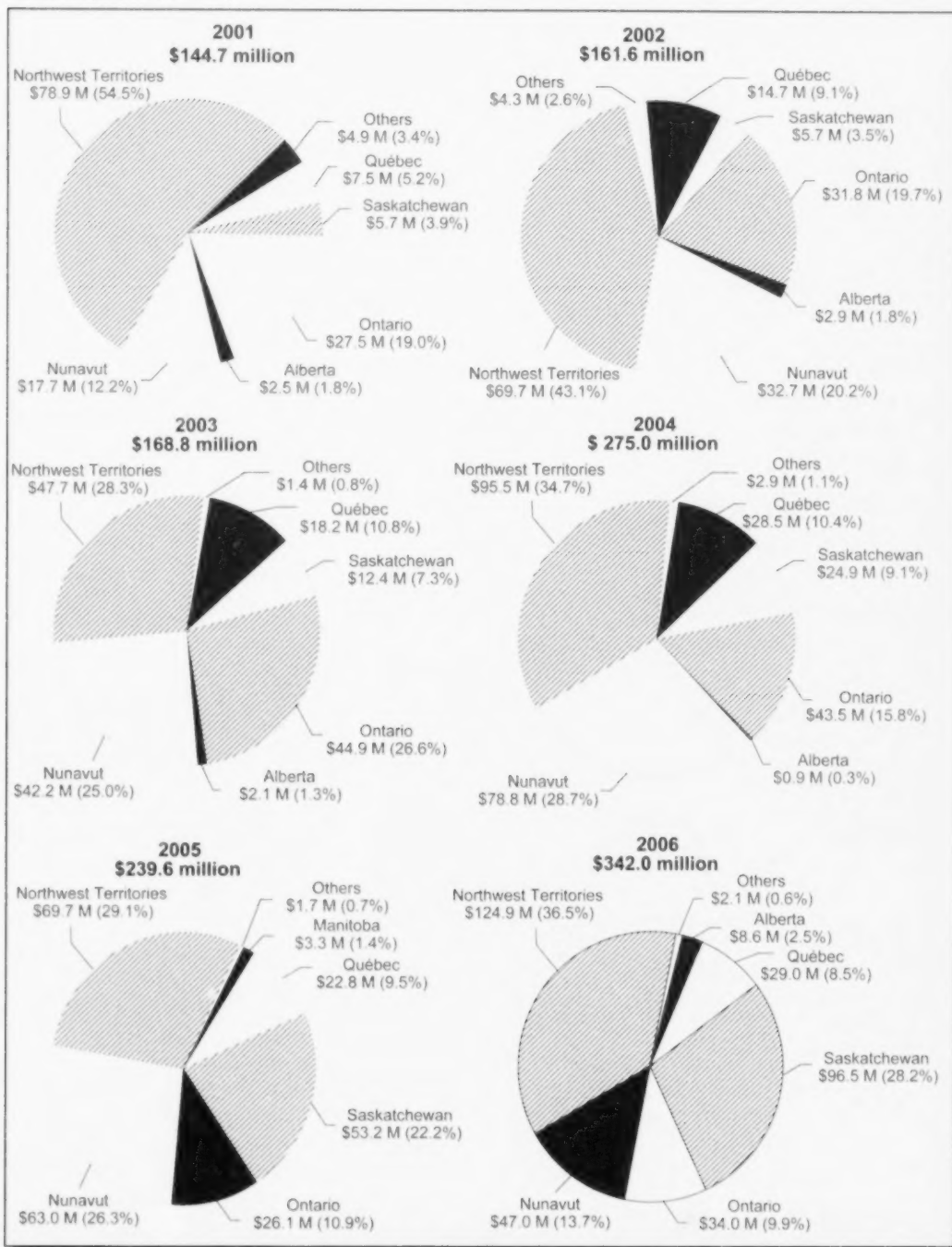


Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) Includes gold, silver, and platinum group metals. (2) Includes copper, nickel, lead, and zinc. (3) Includes ferrous metals, other metals, and nonmetals (including coal).

Notes: Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site field and overhead expenditures, plus engineering, economic and feasibility studies, environment and land access costs. Data for 2006 are final.

Figure 9
Diamond Exploration and Deposit Appraisal Expenditures in Canada, by Province and Territory,
2001-06 (Current Dollars)



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

Notes: Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site field and overhead expenditures, plus engineering, economic and feasibility studies, environment and land access costs. Numbers may not add to totals due to rounding. Data for 2006 are final.

TABLE 5. EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES IN CANADA, (1) BY TYPE OF COMPANY AND MINERAL COMMODITY, 2004-06 (Current Dollars)

Type of Company	Base Metals	Precious Metals	Uranium	Diamonds	Others (2)	Total
(\$000)						
2004						
Junior companies and prospectors	128 942	308 205	10 727	107 082	44 762	599 718
Senior companies	112 333	234 734	33 104	167 887	30 009	578 067
Total	241 275	542 940	43 831	274 969	74 771	1 177 785
2005						
Junior companies and prospectors	170 356	358 715	54 005	147 874	70 337	801 287
Senior companies	133 143	176 921	37 196	91 714	64 530	503 504
Total	303 499	535 635	91 201	239 587	134 868	1 304 790
2006						
Junior companies and prospectors	242 699	492 114	158 535	203 344	141 339	1 238 031
Senior companies	169 229	232 497	55 055	138 681	78 033	673 496
Total	411 928	724 611	213 590	342 025	219 373	1 911 527

Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site costs incurred for field work and overhead, plus engineering, economic and feasibility studies, environment and land access costs. (2) Includes iron, other metals, coal and other nonmetals.

Notes: Numbers may not add to totals due to rounding. Data for 2006 are final.

In doing so, junior companies continued to show a marked preference for precious-metals (mostly gold) exploration and deposit appraisal. Their steadily increasing expenditures on the search for gold and platinum group metals (PGM) reached \$492 million in 2006, an increase of 37% over the \$359 million recorded in 2005 and almost 3.5 times the amount recorded in 2003. Junior companies also significantly increased their spending on the other commodity groups. For example, junior companies increased their expenditures on the search for base metals from \$170 million in 2005 to \$243 million in 2006, on the search for uranium from \$54 million to \$159 million, on the search for diamonds from \$148 million to \$203 million, and on the "others category" from \$70 million to \$141 million. These rather impressive numbers are further proof that junior companies have been at the forefront of this period of intense exploration activity in Canada.

1.3.2 2007 Exploration and Deposit Appraisal Expenditures

1.3.2.1 Statistical Summary

As explained in the opening paragraphs of this chapter, company spending intentions for 2007 were compiled in January 2007 and were revised between March and September of the same year. While this approach yields more timely forecasts of exploration and deposit appraisal expenditures, it remains a less detailed survey exercise. For instance, data on spending by type of commodity and by type of work are not exhaustive enough in the 2007 revised forecast results to be presented in this report. Rather, they will be available in the 2008 edition after results from the final survey have been released.

Company spending intentions, compiled in January 2007 and revised between March and September of the same year, reveal that 770 companies (project operators) intended to spend a record \$2.5 billion (\$2545 million) in 2007 (**Figures 1 and 2, Table 1**). When including prospectors and groups of prospectors, this total reaches \$2547 million. The final amount of exploration and deposit appraisal spending for 2007 will be confirmed in the *Actual* survey, which will be conducted in 2008. However, early indications are that continued favourable exploration investment conditions and rising costs could result in an even higher total for 2007.

The total of 770 project operators is very similar to the 2006 total of 768 companies (expenditures of \$1912 million, when including prospectors) and could indicate that a peak has been reached, or is being approached, in terms of industry participants and projects. On average, companies were planning to spend \$3.3 million per project in 2007, an amount equal to three times the level of 2003 (\$1.1 million). Part of this increasing-investment-per-project trend can be explained by higher exploration costs resulting from the intensifying use of equipment and resources. However, it has also taken place in an environment conditioned by strong metal prices, interesting exploration results, generous incentive levels, and mining-friendly capital markets. The timing and combination of these favourable conditions have provided a strong impetus for companies to invest in and bring their projects as far along the mineral development spectrum as possible.

This commitment to serious exploration and deposit appraisal activity is again highlighted by the number of high-spending project operators. Revised company spending intentions indicate that a total of 368 companies (318 in 2006, 231 in 2005, 187 in 2004, and 115 in 2003) each intended to spend more than \$1 million in 2007 (**Table 1**). These 368 companies expected to spend a total of \$2397 million, or 94% of total intended expenditures for 2007. This \$2397 million total also represents a 35% increase from the \$1777 million spent on projects of \$1 million or more in 2006.

Very large spending intentions (more than \$10 million) used to be the appanage of senior companies. Starting in 2005, the two types of companies began to split almost equally the number of these large projects. In 2007, junior company project operators reported spending intentions of \$10 million or more for 25 projects while senior companies planned 26 such projects. The 25 junior company project operators had spending intentions averaging \$20 million and the 26 senior ones, \$29 million. Once again, junior companies totally dominated the other spending categories. Overall, 638 junior company project operators intended to spend \$1557 million (\$2.4 million per project) versus 132 senior company project operators intending to spend \$988 million (for a much higher \$7.5 million per project). Although senior companies did spend more per project, the intensive activity reported by this pool of junior company project operators, and its ultimate degree of success (in terms of discoveries and increased mineral resources), will play a crucial role in determining the future of mining in Canada.

As can be expected, nearly all Canadian mining jurisdictions reported significant increases in levels of intended exploration and deposit appraisal expenditures for 2007. The largest increases, in dollar terms, were expected in Ontario (+\$173 million), Québec (+\$90 million), and British Columbia (+\$81 million) (**Figure 2** and **Table 2**). With respective spending intentions totals of \$519 million, \$385 million and \$425 million, these three provinces should account for 52% of the Canadian total in 2007. Outstanding numbers were also expected in other jurisdictions, namely Saskatchewan (\$277 million), Nunavut (\$267 million), the Northwest Territories (\$192 million), and Newfoundland and Labrador (\$160 million). The Yukon's total of \$144 million is more than ten times the one recorded just four years before, in 2003. Manitoba is expecting an almost 100% increase to \$103 million while Nova Scotia and New Brunswick should see their spending increase by 142% and 128%, respectively, to reach totals of \$27 million and \$31 million. Only Alberta will not benefit from rising mineral exploration spending as its expenditures are expected to stay at about the same level as in 2006 with a forecast of \$17 million.

In Ontario and Québec, these high levels of spending are distributed among many projects targeting a number of commodities (e.g., precious metals, base metals, diamonds, and uranium) and are also relatively well balanced between junior and senior companies. In British Columbia, where spending is also well distributed among projects and commodities, including coal and porphyry deposits (copper and molybdenum), the junior mining sector is definitely predominant. Of course, Saskatchewan is at the forefront of the intensifying search for uranium that is sweeping the country, but diamonds are also a factor there. The latter continue to attract interest in the Northwest Territories and also in other jurisdictions such as Nunavut where gold, base metals, iron ore, and uranium are also sought. Uranium has even been a factor in the exploration revival that is taking place in the Yukon (where other non-traditional commodities such as tungsten and molybdenum

have joined the more traditional gold, silver, zinc, and copper) and it has also been an important factor in Newfoundland and Labrador (along with base metals and gold).

Revised company spending intentions indicate that off-mine-site exploration and deposit appraisal expenditures are expected to surpass the \$2 billion mark in 2007 and reach \$2316 million. This 31% increase in off-mine-site spending represents yet another segment of the rather steeply growing trend that has characterized this type of expenditures since the mineral exploration sector really started its recovery in 2003 (**Figures 3a** and **3b**). Ontario (+\$118 million), Québec (+\$91 million) and British Columbia (+\$66 million) are expected to experience the largest increases, in dollar terms, for that type of spending in 2007 (**Figure 4**).

Overall, off-mine-site spending is expected to account for 91% of total exploration and deposit appraisal expenditures in Canada in 2007. This continued emphasis on off-mine-site exploration could lead to important new discoveries and resource upgrades. However, it does not help alleviate concerns about the depletion of ore reserves in producing mines.

Ontario is expected to remain the undisputed leader amongst Canadian mining jurisdictions for on-mine-site exploration and deposit appraisal spending in 2007. The \$130 million slated for on-mine-site work in that province far outweighs the \$29 million and \$28 million that are respectively forecast for second- and third-ranked British Columbia and Québec. In Ontario, the approximate 70% increase over the stable levels recorded for this type of spending during the period 2003-06 could indicate that some of its mines emerged from the intense merger activity that took place in 2006 with a renewed commitment towards resources and reserves extension.

1.3.2.2 *Spending by Work Phase*

Revised company spending intentions indicate that expenditures dedicated solely to exploration activities will increase by 33% in 2007 to reach \$2004 million (**Figures 5a** and **5b**). This amount represents 79% of total intended exploration and deposit appraisal expenditures for that year. Of this \$2004 million total, \$1904 million (95%) will be incurred off mine sites (**Figure 3a**).

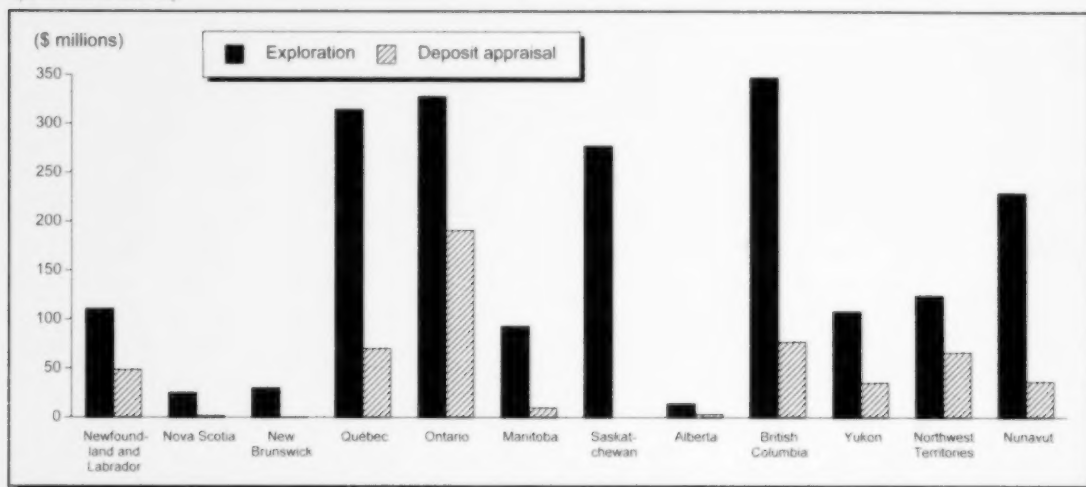
Deposit appraisal spending is expected to amount to \$543 million in 2007. Of this total, \$411 million (76%) will be incurred off mine sites and \$132 million (24%) will be incurred on mine sites.

On a provincial/territorial basis, exploration-phase expenditures are once again expected to surpass deposit appraisal expenditures in every mining province/territory (**Figure 10**). Saskatchewan, New Brunswick and Nova Scotia are expected to have virtually all of their work recorded under the exploration category. The proportion of exploration work, out of total exploration and deposit appraisal spending, in other provinces/territories is also expected to be at least 80% in Manitoba, Nunavut, British Columbia, Québec, and Alberta.

In terms of ranking by total exploration-phase expenditures, British Columbia (\$348 million) is expected to take the lead over Ontario (\$328 million) and Québec (\$315 million). Saskatchewan (\$277 million) and Nunavut (\$230 million) will also be the recipients of major exploration-phase investments.

With an increase of \$108 million over 2006, Ontario is expected to lead the country in terms of deposit appraisal spending with spending intentions totaling \$191 million. Despite a drop of \$45 million from the 2006 total, British Columbia should rank second with \$77 million. Québec should claim third place with a forecast increase of \$15 million that will take its 2007 deposit appraisal spending total to \$71 million. Ontario, the Northwest Territories, Newfoundland and Labrador, and the Yukon are the provinces/territories that show the most balance in their exploration/deposit appraisal portfolios.

Figure 10
Exploration and Deposit Appraisal Expenditures in Canada, by Province and Territory, 2007
 (Current Dollars)



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

Notes: Exploration and deposit appraisal expenditures include off-mine-site and on-mine-site field and overhead expenditures, plus engineering, economic and feasibility studies, environment and land access costs. Data for 2007 are based on revised company intentions compiled between March and September 2007.

1.3.2.3 Spending by Type of Company

Based on company spending intentions compiled in January 2007 and revised between March and September 2007, a total of 132 senior project operators intended to spend \$988 million in 2007, accounting for 39% of all exploration and deposit appraisal expenditures for that year (**Figures 1 and 2**, and **Table 1**). Overall spending is expected to increase by 33% in 2007, going from \$1912 million in 2006 to \$2547 million. Senior spending should exceed that growth rate and rise by 47%, reflecting the producers' quest for additional resources and reserves to take advantage of favourable market conditions across a broad range of mineral commodities. Still, junior exploration spending will exceed that of senior companies for the fourth year in a row, a feat that only happened once before, in 1987, when the generous Mining Exploration Depletion Allowance combined with favourable metal prices to push junior exploration spending to record highs. About 61% of total spending by senior companies in 2007 is expected to be allocated to activities falling in the exploration work phase (**Figures 5a and 5b**). Hence, senior companies' expenditures will be more balanced between exploration and deposit appraisal spending than those of junior companies.

Two thirds (67%) of the expenditures intended by senior firms for 2007 were destined for Ontario (\$308 million), Québec (\$139 million), Nunavut (\$115 million), and British Columbia (\$105 million) (**Figure 2**). Examples of aggressive exploration and deposit appraisal programs by senior companies include those of Goldcorp Inc. for its Red Lake gold mine in Ontario and Xstrata Nickel for its Raglan nickel operation in Québec.⁵ Interestingly, senior companies are increasing their stake in Nunavut as demonstrated by the acquisition of Cumberland Resources' Meadowbank gold project by Agnico-Eagle Mines Limited and Wolfden Resources' Amaqut gold and base-metal projects (High Lake, Izok Lake, Nunavut Gold) by Zinifex. As can be expected, Ontario (+\$122 million), but also Nunavut (+\$66 million) and Newfoundland and Labrador (+\$47 million), should account for most of the 47% overall increase in senior company spending in 2007.

Excluding prospectors, the number of junior project operators was expected to total 638 in 2007, compared to 649 in 2006 and 642 in 2005. The number of junior project operators has hovered around 640 for three years now and could be at a peak after a period of growth that saw this number increase from 387 in 2000 (**Figure 1** and **Table 1**). This relatively stable number of junior project operators is expected to increase its current dollar spending by \$324 million (+26%) in 2007. This significant gain comes on the heels of seven successive years of growth and maintains the momentum created by gains (in 2006 constant dollars and including prospectors) of 44% in 2003, 105% in 2004, 30% in 2005, and 51% in 2006 (**Figures 5a** and **5b**). Riding this upward trend, total intended junior company spending is expected to exceed the \$1.5 billion mark and reach \$1559 million (current dollars) in 2007. Notwithstanding differences in surveying methodologies over the years, this total is the highest ever recorded for junior company spending (in both current and constant 2006 dollars).

This eighth consecutive increase in junior company spending will be felt throughout most of the country (**Figure 2**). The largest increases, in dollar terms, should occur in Québec (+\$87 million), Ontario (+\$50 million), and the Northwest Territories (+\$44 million). In decreasing order of expenditures, British Columbia, with an outstanding total of \$321 million, Québec (\$247 million), Ontario (\$211 million), Saskatchewan (\$195 million) and Nunavut (\$152 million), as a group, are expected to account for 72% of all junior company expenditures in Canada in 2007. The Yukon (\$135 million), the Northwest Territories (\$129 million), and Newfoundland and Labrador (\$88 million) should also boast strong levels of junior company expenditures, while New Brunswick and Nova Scotia will experience significantly higher levels of junior spending. Only Nunavut and Alberta are expected to see junior company spending decrease in 2007. As indicated earlier, the small decrease in Nunavut will be compensated for by a strong increase in senior company spending.

When not counting projects under the \$50 000 level, junior company project operators typically spent \$100 000 to \$500 000 at the onset of the rising trend in 2000, 2001 and 2002. Over the years, junior company project operators with higher spending (\$500 000 or more) became more prevalent as this sector picked up momentum (**Table 1**). This tendency continued all the way to the spending intentions survey of 2007 and translates into almost 300 junior company project operators intending to spend more than \$1 million. In fact, for 2007, junior company project operators are expected to number 217 in the \$1 million-\$5 million interval, 55 in the \$5 million-\$10 million interval, and 25 in the more than \$10 million interval. Overall, the 638 junior company project operators will average \$2.4 million in spending for a total injection of over \$1.5 billion in the Canadian mineral exploration sector in 2007.

Junior company expenditures are poised to exceed those by senior companies for the fourth year in a row. These companies continue to be able to rapidly mobilize their resources in the presence of positive market outlooks for a number of mineral commodities, favourable financing conditions, and the availability of government-provided measures to encourage grassroots-type (or off-mine-site) exploration. In this positive environment, junior companies have also been able to benefit from associations with senior companies to provide funds, knowledge and expertise in the joint exploration or outright sale of promising properties.

Although the current strong performance of the Canadian junior mining sector is primarily driven by soaring metal prices, the rejuvenation of this sector also coincided with the introduction of government measures to address the exploration crisis of the late 1990s/early 2000s. Incentives like the federal Investment Tax Credit for Exploration (ITCE), which was introduced in October 2000 and is linked to the use of flow-through shares, as well as a number of harmonized and non-harmonized provincial/territorial measures, were specifically designed to meet the needs of the junior mining sector and encourage grassroots-type exploration work.

The Regional Outlook section of this report provides more details on provincial/territorial measures and programs. At the federal level, the ITCE was introduced as a temporary measure to counter one of the most drastic declines in the history of Canadian mineral exploration. It was extended twice in

the federal budgets of 2003 and 2004 and terminated at the end of 2005, although issuing corporations still had until the end of 2006 to incur exploration expenses with funds that were raised before the end of the program. In its first budget, the newly elected government reintroduced the ITCE for 11 months, effective May 2, 2006, until March 31, 2007, and, in its 2007 budget, extended the tax credit for another year (to March 31, 2008). At the time of writing this report, there was no news about the future of this tax measure beyond its planned expiry date.

1.3.2.4 *Spending by Type of Commodity Sought*

Because complete statistics on commodities sought are collected in the *Actual* part of the survey rather than the *Spending Intentions* component, no firm data on this type of spending are available yet for 2007. As a result, a spending-by-commodity-sought analysis for 2007 will not be presented in this report. Nevertheless, early indications are that important gains will be realized in the base-metals and uranium commodity groups, along with further increases in the precious metals group. The "other metals" category is also expected to perform well because of strong interest in molybdenum.

1.4 DRILLING

Drilling activities are an essential component of the mineral development cycle from the anomaly investigation stage to the deposit delineation and deposit definition stages. As such, drilling statistics constitute a valuable indicator of recent levels of Canadian mineral exploration and deposit appraisal activity.

Diamond drilling is the most widely used drilling method for determining the existence, location, extent, grade, and tonnage of a mineral deposit. This type of drilling figures in most of the following analysis although, in some cases, other types of drilling are also considered. The data are from the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures and include all metres (m) drilled and expenditures reported by companies for their "own account" (drilling they did themselves) and for contracted drilling work. Data for 2007 will only be available once the *Preliminary* survey results are released in March 2008.

1.4.1 *Drilling by Work Phase*

According to the federal-provincial/territorial survey, a total of 5 323 000 m of surface and underground drilling (including diamond drilling and other drilling methods) was carried out for exploration and deposit appraisal purposes in Canada in 2006, compared to 3 890 000 m in 2005 (**Tables 6 and 7**). This total was the highest since the 6 483 000 recorded in 1987. Of the 5 323 000 m drilled in 2006, 4 849 000 m (91%) was accounted for by diamond drilling, up by 30% from the 3 731 000 m drilled in 2005.

Reflecting the continued focus on grassroots and off-mine-site types of work, some 90% (4 773 100 m) of total drilling activity in 2006 was dedicated to the exploration phase while the remaining 10% (549 500 m) was dedicated to deposit appraisal work (**Table 8**). In terms of provincial/territorial rankings, Ontario (1 302 000 m) dominated exploration-phase drilling with 27% of the total metres drilled for that year while Québec (900 000 m) and British Columbia (899 000 m) combined for another 38% (**Table 6**). On the deposit appraisal side, Ontario (227 300 m), Québec (134 400 m) and British Columbia (103 100 m) accounted for 85% of all drilling in that work phase.

1.4.2 *Drilling by Type of Company*

After overtaking senior companies in 2005, junior companies continued to account for the most surface and underground drilling (including diamond drilling and other drilling methods) in 2006. When both the exploration and deposit appraisal phases are added together, junior companies

TABLE 6. SURFACE AND UNDERGROUND EXPLORATION AND DEPOSIT APPRAISAL DRILLING IN CANADA, (1) BY PROVINCE AND TERRITORY, 2005 AND 2006

Province/Territory	Surface Drilling			Underground Drilling			Total Drilling		
	Exploration	Deposit Appraisal	Total	Exploration	Deposit Appraisal	Total	Exploration	Deposit Appraisal	Total
(000 metres)									
2005									
Newfoundland and Labrador	110.6	28.9	139.5	—	—	—	110.6	28.9	139.5
Nova Scotia	30.7	5.5	36.2	—	—	—	30.7	5.5	36.2
New Brunswick	24.3	4.8	29.0	—	—	—	24.3	4.8	29.0
Quebec	656.0	31.6	689.6	120.8	80.6	201.4	778.8	112.2	891.0
Ontario	868.6	7.3	876.0	270.4	120.0	390.4	1 139.0	127.4	1 266.4
Manitoba	190.1	—	190.1	28.2	—	28.2	218.3	—	218.3
Saskatchewan	318.8	0.5	319.3	4.2	—	4.2	323.0	0.5	323.5
Alberta	7.8	1.4	9.2	—	—	—	7.8	1.4	9.2
British Columbia	472.4	58.3	530.7	28.7	71.9	100.6	501.1	130.2	631.3
Yukon	61.1	21.2	82.3	0.8	—	0.8	61.9	21.2	83.1
Northwest Territories	67.8	13.7	81.5	—	4.5	4.5	67.8	18.2	86.0
Nunavut	175.9	0.1	176.0	—	—	—	175.9	0.1	176.0
Total	2 966.1	173.3	3 159.5	453.1	277.1	730.2	3 439.3	450.4	3 889.6
2006									
Newfoundland and Labrador	245.5	5.6	251.1	—	27.7	27.7	245.5	33.3	278.8
Nova Scotia	33.0	1.8	34.7	—	—	—	33.0	1.8	34.7
New Brunswick	51.9	—	51.9	—	—	—	51.9	—	51.9
Quebec	783.9	102.2	886.1	116.0	32.2	148.2	899.9	134.4	1 034.3
Ontario	1 014.9	139.7	1 154.6	287.0	87.6	374.6	1 302.0	227.3	1 529.2
Manitoba	142.6	—	142.6	55.6	—	55.6	198.2	—	198.2
Saskatchewan	492.3	—	492.3	12.2	—	12.2	504.5	—	504.5
Alberta	27.6	21.0	48.6	—	—	—	27.6	21.0	48.6
British Columbia	889.8	72.6	962.4	9.3	30.5	39.8	899.1	103.1	1 002.2
Yukon	222.7	8.3	231.0	—	—	—	222.7	8.3	231.0
Northwest Territories	168.1	20.1	188.2	—	—	—	168.1	20.1	188.2
Nunavut	220.8	0.3	221.1	—	—	—	220.8	0.3	221.1
Total	4 293.0	371.6	4 664.6	480.1	177.9	658.0	4 773.1	549.5	5 322.6

Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.
— Nil

(1) Includes diamond drilling and other drilling methods such as rotary and percussion.

Note: Numbers may not add to totals due to rounding.

TABLE 7. SURFACE AND UNDERGROUND EXPLORATION AND DEPOSIT APPRAISAL DRILLING IN CANADA, 1985-2006

Year	Diamond Drilling			Other Drilling (1)		
	Exploration	Deposit Appraisal	Total	Exploration	Deposit Appraisal	Total
(000 metres)						
1985	..	..	2 531	..	..	270
1986	..	..	3 616	..	..	55
1987	..	..	6 221	..	..	262
1988	..	..	6 206	..	..	211
1989	..	..	3 940	..	..	297
1990	..	..	3 702	..	..	241
1991	..	..	2 341	..	..	234
1992	..	..	1 889	..	..	139
1993	..	..	1 932	..	..	282
1994	..	..	2 626	..	..	213
1995	..	..	2 993	..	..	280
1996	..	..	3 898	..	..	169
1997 (a)	2 570	734	3 404	157	239	396
1998	2 024	433	2 458	58	82	140
1999	1 693	583	2 277	62	127	189
2000	1 490	559	2 049	22	9	31
2001	1 359	321	1 679	83	4	87
2002	1 830	476	2 306	99	13	112
2003	2 165	327	2 491	33	28	61
2004	2 977	493	3 470	49	38	87
2005	3 308	423	3 731	132	27	159
2006	4 339	510	4 849	435	39	474

Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

.. Not available.

(a) The exploration and deposit appraisal phases were adopted as part of the survey redesign in 1997.

(1) Other drilling methods include reverse circulation, rotary and percussion.

TABLE 8. SURFACE AND UNDERGROUND EXPLORATION AND DEPOSIT APPRAISAL DRILLING (1) IN CANADA, BY TYPE OF COMPANY, 2005 AND 2006

Type of Company	Exploration Drilling	Deposit Appraisal Drilling	Total by Type of Company
	(000 metres)		
2005			
Junior companies			
Surface	1 821.5	60.3	1 881.8
Underground	39.8	82.4	122.3
Subtotal	1 861.3	142.8	2 004.0
Senior companies			
Surface	1 164.7	113.0	1 277.7
Underground	413.3	194.6	607.9
Subtotal	1 578.0	307.6	1 885.6
Total	3 439.3	450.4	3 889.6
2006			
Junior companies			
Surface	2 942.8	128.2	3 071.0
Underground	20.2	30.5	50.7
Subtotal	2 963.0	158.7	3 121.7
Senior companies			
Surface	1 350.2	243.4	1 593.6
Underground	459.9	147.5	607.4
Subtotal	1 810.1	390.8	2 200.9
Total	4 773.1	549.5	5 322.6

Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) Includes diamond drilling and other drilling methods such as rotary and percussion.

Note: Numbers may not add to totals due to rounding.

accounted for 59% (3 121 700 m) of the total 5 322 600 m drilled in 2006 (**Table 8**). In 2005, junior companies had accounted for 52% of total drilling.

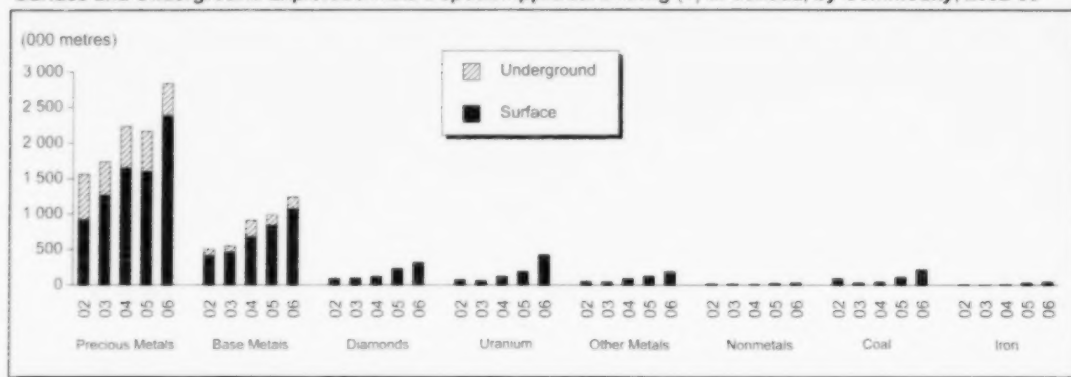
The lead that junior companies enjoy in overall drilling (surface plus underground) can be explained by their higher overall spending, which is focused on surface activities. Hence, as can be expected, junior company drilling is overwhelmingly from the surface. In 2006, 98% of their drilling was classified as surface drilling and the vast majority of this was undertaken in the exploration phase.

By virtue of their ownership of underground mining operations, underground drilling continues to be associated mostly with senior companies. In 2006, senior companies accounted for 92% of the underground drilling in both work phases. In line with earlier years, surface drilling activity was more evenly distributed as junior companies accounted for 66% (3 071 000 m) of the total compared to 34% (1 593 600 m) for senior companies.

1.4.3 Drilling by Type of Commodity Sought

In terms of total surface and underground drilling (including diamond drilling and other drilling methods) by group of commodity sought, **Figure 11** shows that exploration and deposit appraisal drilling activities in Canada in the period 2002-06 were primarily aimed at the discovery of precious metals and base metals. In 2006, a total of 2 848 010 m was drilled in the search for precious metals, representing 54% of total exploration and deposit appraisal drilling. Of this total, 2 391 090 m (84%) was drilled from the surface. Drilling for base metals accounted for 23% (1 241 420 m) of total exploration and deposit appraisal drilling and, once again, surface drilling was more prevalent with 87% (1 076 740 m) of the drilling aimed at this commodity group. Reflecting the favourable market outlook for a number of mineral commodities, drilling also increased in every other commodity group with uranium standing out with 424 080 m of surface drilling in 2006.

Figure 11
Surface and Underground Exploration and Deposit Appraisal Drilling (1) in Canada, by Commodity, 2002-06



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) Includes diamond drilling and other drilling methods such as rotary and percussion.

As can be expected, surface drilling also accounted for most of the exploration and deposit appraisal drilling activity targeting commodities other than precious metals and base metals in 2006. In fact, it represented virtually all of the drilling conducted within these two phases of activity for the discovery of diamonds, uranium, nonmetals, coal and iron.

1.5 CLAIM STAKING

Claim staking is another useful indicator of exploration activity. It is particularly efficient at rapidly highlighting emerging trends, such as the mid- and late-1990s' exploration rush for diamonds and the current uranium plays in various regions of the country. Because claim staking usually happens at a relatively early stage of the exploration and deposit appraisal process, it also provides a good measure of current grassroots-type activities and a good insight into where future advanced (deposit appraisal) work could be focused.

Claim-staking rules and guidelines differ across Canada. In recent years, mineral tenure has evolved with the advent of Internet-based map staking and the granting of mineral rights to some Aboriginal groups who now administer their own regimes. Therefore, in order to ensure timeliness and accuracy of information on mineral tenure regulations in a particular Canadian jurisdiction, the reader is invited to contact the respective provincial/territorial mining recorder's office. Another useful source of information that summarizes the different mineral rights regimes found across Canada (i.e., ground vs. map staking; prospecting permits vs. claims; cost and size of claims, permits and leases; assessment work requirements; etc.) is the Provincial/Territorial Mining Rights Committee. This committee meets on an annual basis and maintains a number of summary tables on the administration of mineral tenure in Canada. One portal where these tables can be viewed is the web site of the Ontario Ministry of Northern Development and Mines at www.mndm.gov.on.ca/mndm/mines/lands.

1.5.1 New Claims Staked

Just as for spending and drilling, which are the other two indicators of mineral exploration activity studied in this chapter, claim-staking activity also increased in 2006. The area of new mineral claims staked increased by 5% from 23.0 million hectares (Mha) to 24.2 Mha (**Table 9**). However, with the different claim-staking rules that apply across the country, it is difficult to look at claim-staking statistics in a national perspective. On a provincial/territorial basis, the Yukon (+124%), Manitoba

TABLE 9. AREA OF NEW MINERAL CLAIMS (1) STAKED IN CANADA, 2005 AND 2006

Province/Territory	2005		2006	
	(hectares)	(%)	(hectares)	(%)
Newfoundland and Labrador	1 051 675	4.6	1 437 800	5.9
Nova Scotia	226 920	1.0	313 590	1.3
New Brunswick	49 536	0.2	65 872	0.3
Québec	2 543 508	11.1	2 294 635	9.5
Ontario	879 824	3.8	1 070 816	4.4
Manitoba	458 633	2.0	822 074	3.4
Saskatchewan	4 464 628	19.4	4 579 521	18.9
Alberta	5 234 000	22.8	3 789 296	15.6
British Columbia	4 864 000	21.2	5 976 649	24.7
Yukon	115 630	0.5	259 056	1.1
Northwest Territories	1 234 930	5.4	1 861 163	7.7
Nunavut	1 852 112	8.1	1 757 506	7.3
Total	22 975 396	100.0	24 227 978	100.0

Source: Provincial and territorial mining recorders.

(1) Excludes coal, potash, salt and industrial minerals, except for Alberta where industrial minerals are included. Also excludes prospecting permits for the Northwest Territories and Nunavut.

Note: Numbers may not add to totals due to rounding.

(+79%) and the Northwest Territories (+51%) all recorded strong proportional increases. In terms of actual hectares staked, 2006 data show that British Columbia (+1.11 Mha) recorded the largest increase, followed by the Northwest Territories (+0.63 Mha), Newfoundland and Labrador (+0.39 Mha), and Manitoba (+0.36 Mha).

In British Columbia, recent public geoscience investment in BC Geoscience's QUEST project in the Quesnel Terrane, between Williams Lake and north of Mackenzie, provided impetus for companies looking for new ground. A proposed expansion of the electrical grid in northwestern British Columbia also encouraged companies looking at projects in that area. The high price of molybdenum was also a factor. In the Northwest Territories, some of the increase in new claims staked can be attributed to prospective diamond terranes around the Ekati and Diavik mines and on Victoria Island, as well as uranium prospecting in the Thelon, Baker and Hornby basins. Uranium and nickel discoveries have been an important factor in Newfoundland and Labrador, while Manitoba has experienced increased staking for gold around the recently re-opened Bissett mine and for base metals in the northwestern part of the province.

1.5.2 Claims in Good Standing

In terms of area occupied by claims in good standing at the end of 2006, British Columbia (12.2 Mha), Saskatchewan (12.0 Mha), Alberta (9.6 Mha) and Québec (8.4 Mha) were the national leaders in a year that saw an increase of 18% in the Canadian total (**Table 10**). This 18% gain was preceded by an increase of 38% in 2005 and by three years of stability before that, when approximately 4.1% of Canada's total landmass was occupied by such claims, compared to 6.8% in 2006. The increasing area of claims in good standing in Canada indicates that some of the increased spending recorded in 2005 and 2006 has been incurred on new ground and that exploration and mining companies have decided that their new properties warrant further investigation. Based on the company spending intentions for 2007, it is unlikely that a consolidation of claims in good standing is in the offing.

TABLE 10. AREA OCCUPIED BY CLAIMS IN GOOD STANDING IN CANADA, 2005 AND 2006

Province/Territory	Total Area	Area of Claims in	Area of Claims/
		Good Standing	Total Area
	(hectares)		(%)
2005			
Newfoundland and Labrador	40 572 000	2 213 800	5.5
Nova Scotia	5 549 000	277 782	5.0
New Brunswick	7 344 000	304 304	4.1
Québec	154 068 000	7 478 911	4.9
Ontario	106 858 000	3 368 512	3.2
Manitoba	64 995 000	5 533 316	8.5
Saskatchewan	65 233 000	7 441 852	11.4
Alberta	66 119 000	8 277 000	12.5
British Columbia	94 931 000	8 970 000	9.5
Yukon	48 345 000	1 238 404	2.6
Northwest Territories	143 232 000	5 275 174	3.7
Nunavut	199 400 000	6 807 782	3.4
Total Canada	996 646 000	57 186 837	5.7
2006			
Newfoundland and Labrador	40 572 000	3 317 650	8.2
Nova Scotia	5 549 000	408 240	7.4
New Brunswick	7 344 000	340 400	4.6
Québec	154 068 000	8 423 423	5.5
Ontario	106 858 000	3 662 304	3.4
Manitoba	64 995 000	4 726 543	7.3
Saskatchewan	65 233 000	12 020 675	18.4
Alberta	66 119 000	9 599 084	14.5
British Columbia	94 931 000	12 246 353	12.9
Yukon	48 345 000	1 366 428	2.8
Northwest Territories	143 232 000	4 899 539	3.4
Nunavut	199 400 000	6 322 273	3.2
Total Canada	996 646 000	67 332 912	6.8

Sources: Natural Resources Canada; provincial/territorial mining recorders.

Note: Data for Prince Edward Island are excluded.

1.6 OUTLOOK FOR BASE METALS AND GOLD IN 2008

As mentioned earlier in this analysis, base metals and gold accounted for approximately 60% of all exploration and deposit appraisal spending in 2006. Based on early survey indications, significant gains in terms of expenditures are expected for both commodity groups once all data have been compiled for 2007. The following analysis provides an outlook for these metals in 2008.

1.6.1 Global Macroeconomic Outlook

Exploration activity is highly correlated with the prices of base metals and gold. In turn, the prices of base metals and gold are sensitive to macroeconomic activity. At the time of writing this analysis (January 2008), the U.S. economy was in difficulty and, as a result, global economic growth was expected to suffer in 2008. Globalization will ensure that the prospects of the developing countries (in particular, Brazil, Russia, India, and China) are coupled with those of the high-income countries (the United States, Europe, and Japan). Economic activity in Asia (i.e., China) is expected to decelerate in late 2008 after the Beijing Olympics.

Most economists, including those at the International Monetary Fund (IMF), are predicting that the United States' economy (including its troubled housing and financial markets) and, more broadly, the global economy, will start to recover in 2009. In 2008 or 2009, the U.S. dollar is expected to bottom out against most major currencies (e.g., the Euro) as U.S. interest rates find a floor.

1.6.2 Base-Metals Outlook

The demand for base metals is pro-cyclical (it tends to rise during periods of strong global economic growth and fall during periods of contractions or recessions). As a result of slow global growth, the demand for base metals will weaken in 2008. The Baltic Dry Index, a measure of the price of shipping bulk commodities on sea freighters, has plunged over 40% from its peak in late October 2007, indicating slower demand for bulk commodities such as base metals. The Chinese government is expected to slow its economy to rein in inflation in the latter half of 2008 and, as a result, global demand for base metals may weaken. Tighter lending markets in the United States are expected to dampen consumer spending, which could reverberate through exporting economies, particularly China.

1.6.2.1 Copper

China is the world's largest consumer of copper, accounting for 22% of global consumption, followed by the United States, which accounts for 12%. In 2007, the world consumed 18.0 million tonnes (Mt) of refined copper, an increase of 0.89 Mt, or 5.2% over the previous year (**Table 11**). Strong growth in China, India, and Russia offset declining growth in the United States, Europe, and Japan. In 2008, global consumption of refined copper is forecast to total 18.70 Mt, an increase of 0.69 Mt, or 3.8%.

Over the period 2004-06, copper producers struggled to keep pace with demand as output was stagnant. In 2007, the production of copper from mines jumped by 0.77 Mt, or 5.1%, year-on-year to 15.79 Mt. In 2008, the production of copper from mines is expected to rise by a further 1.2 Mt, or 7.5%, to 16.99 Mt due to the development of greenfield operations (i.e., new mines) and brownfield expansions (i.e., expansion of existing mines and processing capacity). In 2007, the global production of refined copper rose by 0.77 t, or 4.4%, to 18.12 Mt. In 2008, the world's output of refined copper is expected to rise by a further 0.83 Mt, or 4.6%, to 18.95 Mt due to increases in electrolytic refinery production in China, India, and Japan, and in solvent extraction/electrowinning production in Chile, Africa, and the United States.

In 2008, the market for copper is forecast to continue to be tight due to limited new supply and robust demand in China, India, and Russia. According to Bloomberg News' recent survey of traders,

TABLE 11. BASE-METALS CONSUMPTION AND PRODUCTION, 2005-08

	2005	2006	2007 (e)	2008 (f)
	(million tonnes)			
COPPER				
Use of refined copper	16.73	17.12	18.01	18.70
Mine production	14.92	15.02	15.79	16.99
Refined production	16.59	17.35	18.12	18.95
Refined production less use	-0.14	0.23	0.11	0.25
NICKEL				
Primary use	1.25	1.40	1.35	1.47
Refined production	1.30	1.36	1.47	1.57
Production less primary use	0.05	-0.04	0.13	0.10
ZINC				
Consumption	10.61	11.00	11.38	11.96
Mine production	10.15	10.47	11.18	12.24
Refined production	10.23	10.65	11.32	12.20
Refined production less consumption	-0.38	-0.35	-0.06	0.24

Sources: International Copper Study Group; International Nickel Study Group; International Lead and Zinc Study Group.

(e) Estimated; (f) Forecast.

analysts and investors, the price of copper is forecast to moderate to US\$3.00/lb, but to remain well above historical levels.

1.6.2.2 Nickel

Although the manufacturing of stainless steel is subject to increasing use of low-nickel and no-nickel alloys, it remains the largest user of nickel, accounting for about 65% of the use of nickel. China is the world's largest consumer of nickel (accounting for 22% of global consumption), followed by the United States (11%).

In 2007, the demand for nickel fell to 1.35 Mt (a decrease of 3.6% year-on-year) due to the extraordinarily high price of nickel. In 2008, the consumption of nickel is forecast to rise to 1.47 Mt (an increase of 8.9%) due to the continued growth in the capacity of China's stainless steel mills (**Table 11**). The global market for stainless steel is expanding rapidly, by approximately 5-6%/y.

In 2007, the primary production of refined nickel rose to 1.47 Mt (an increase of 7.9% over the previous year). In 2008, production is forecast to rise to 1.57 Mt (an increase of 6.7% year-on-year) as new projects commence operation in response to the strong price of nickel.

In 2008, the market for nickel will continue to be volatile. The production of primary nickel will exceed demand, placing pressure on the price of nickel to return to historical levels. The price of nickel is expected to range between US\$11.75/lb and US\$13.75/lb this year.

China has limited domestic sources of nickel and, as a result, is heavily reliant on imports of nickel to meet its booming need for stainless steel. In response, China is producing nickel pig iron from low-grade laterite nickel ores. However, the high cost of producing nickel pig iron suggests that it provides some support to the price of nickel at about US\$10.00/lb.

1.6.2.3 Zinc

China is the world's primary consumer of zinc, accounting for 33% of global consumption. China's consumption of zinc is three times that of the United States – the world's second largest consumer. In 2007, the global consumption of zinc rose by 3.5% to 11.38 Mt (**Table 11**). In 2008, it is forecast to increase a further 5.1% to 11.96 Mt largely due to China's growing demand for the base metal, which should offset declining demand in the United States.

The opening of new mines in Bolivia, Peru, Australia, and Canada is expected to boost the primary production of zinc by 6.8% to 11.2 Mt in 2007 and by 9.5% to 12.2 Mt in 2008. China is a significant producer of mined and refined zinc, accounting for one third of global production.

Until 2004, China was a significant net exporter of refined zinc. In 2004, the Chinese government began altering its tariff regime to discourage exports and encourage imports of refined zinc. As a result, China became a net importer of zinc and the price of zinc soared. In 2006, China recorded a modest net export balance and prices stabilized. In the foreseeable future, China is expected to remain a net exporter of zinc, placing downward pressure on the price of zinc. The price of zinc should range between US\$1.00/lb and US\$1.20/lb in 2008.

1.6.2.4 Summary - Base Metals

In 2007, the prices of base metals peaked after five consecutive years of growth. Although prices may rally in the short term due to disruptions in supply (e.g., arising from strikes and shortages of electricity), on balance they will fall but remain well above secular (i.e., pre-2002) levels. The prices of base metals will continue to fall until the United States' economy and dollar stabilizes.

TABLE 12. GLOBAL DEMAND AND SUPPLY OF GOLD, 2004-08

	2004	2005	2006	2007 (e)	2008 (f)
	(tonnes)				
DEMAND					
Fabrication					
Jewellery	2 614	2 707	2 280	2 407	2 281
Other (e.g., electronics and dentistry)	552	575	639	661	664
Total fabrication	3 166	3 282	2 919	3 068	2 945
Bar hoarding	257	263	226	238	240
Net producer de-hedging	422	86	373	418	98
Implied net investment	—	480	388	101	726
Total demand	3 844	4 111	3 906	3 826	4 009
SUPPLY					
Mine production	2 492	2 550	2 471	2 444	2 524
Official sector sales	469	674	328	488	450
Old gold scrap	849	886	1 108	895	1 035
Implied net investment	34	—	—	—	—
Total supply	3 844	4 111	3 906	3 826	4 009
Gold price (London, US\$/oz)	409	444	604	695	862

Sources: GFMS Ltd.; London Bullion Market Association.

— Nil; (e) Estimated; (f) Forecast.

1.6.3 Gold Outlook

Over two thirds of the gold consumed in the world is used to produce jewellery (**Table 12**). Asia accounts for 73% of the jewellery sales. Over the past decade, the demand for jewellery has declined by 27% in response to stronger gold prices. In 2008, the demand for jewellery should fall by a further 126 t or 5% year-on-year due to stronger gold prices and weaker economic growth, particularly within the United States. Other fabrication (e.g., electronic products and dentistry) accounts for 14% of the global demand for gold. Other fabrication has risen modestly over the past decade. In 2008, it should total approximately 664 t, which is essentially unchanged from the previous year.

In response to strong bullion prices, producers reduced their hedge book by an estimated 418 t in 2007, a figure only marginally below the record level of de-hedging in 2004. Producers are expected to reduce their hedge books by only 98 t in 2008 because the global hedge book had been reduced to less than 1000 t at the end of 2007.

Coin sales will remain weak in 2008 for two reasons. First, retail investors, the traditional purchaser of coins, are playing a minor role in the current rally in bullion prices. Second, investors favour paper gold products instead of physical gold to avoid storage costs and spreads.

Bar hoarding is the investment in physical gold in markets outside the Western World. Typically, a rising price does not encourage further bar hoarding. In most developing countries, bar hoarding has been unresponsive to rising prices despite growing wealth and savings. In 2008, bar hoarding should be essentially unchanged from the previous year (240 t) and equal the average over the past decade (237 t).

Implied net investment is an estimate of the net effect of derivatives listed on commodity exchanges, over-the-counter market, gold Exchange Traded Funds (ETFs), and other exchange-related products. In 2008, investment activity will once again be the principal driver of the demand for gold. Investment activity will continue to expand and be dominated by the institutional players and wealthy individuals. Rising investment demand should more than offset the expected fall in fabrica-

tion demand and net-producer dehedging. Implied net investment (over-the-counter market, ETFs, etc.) is forecast to rise to 726 t this year. On balance, the demand for gold is expected to rise by 183 t year-on-year.

In brief, investment demand will be at the root of the strong bullion demand in 2008. Gold will continue to fulfill its role as a hedge against financial, economic, and geopolitical disruptions.

The sources of gold are classified as either below (i.e., mine production) or above ground. Unlike most commodities, gold is not consumed. It is preserved as above-ground stocks that can be sold as the price of gold rises.

The production of gold from mines is highly inelastic over the short to medium term (i.e., insensitive to changes in bullion prices). Despite stronger product prices, mine production will continue to be hampered by a shortage of mining equipment, skilled labour, declining reserves, and permitting issues over the next year and beyond. Over the past decade, mine production has averaged 2500 t with little variance. In 2008, mine production is forecast to rise marginally to 2524 t, or 3% year-on-year, despite the current exceptional price of the yellow metal.

Central banks are the largest single holder of above-ground stocks. Although a number of central banks have increased their gold reserves over the past decade, the sector has been a net seller of bullion, contributing, on average, 561 t/y over the past decade. Since 1999, the bulk of sales have been regulated by Central Bank gold agreements, which stabilize the sales from 15 of the world's largest holders of gold. In 2008, sales by central banks are expected to decline by 38 t, or 8%, to 450 t.

Although the production of gold is inelastic, recycled or scrap gold is sensitive to changes in the price of bullion. In 2008, the supply of scrap gold is expected to rise to 1035 t, or 16% year-on-year, in response to the strong gold prices. In total, the supply of gold should amount to about 4000 t, similar to the level at the beginning of this millennium. On balance, the supply of gold has been unresponsive to the strong price of gold in recent years.

Forecasting the price of gold is more challenging than most commodities because the price is not only driven by the physical fundamentals of supply and demand, but also by investment factors. As most investors are well aware, investment demand can result in a premium in the price for gold well above its marginal cost of production, as is currently being experienced. In 2008, the price of gold will continue to be driven by investor demand, as opposed to the fundamentals of demand and supply. Until the United States' economy recovers and the U.S. dollar stabilizes, the price of gold will remain strong. According to the London Bullion Market Association's recent survey of 24 analysts, the price of gold will rise for a record seventh consecutive year in 2008. Based on the results of the Survey, the average price of bullion will range from US\$750/oz to US\$1250/oz, with a mean price of US\$862/oz, well above the annual average price of about US\$700/oz in 2007. In brief, gold prices had a terrific run in 2007 and should remain strong in 2008.

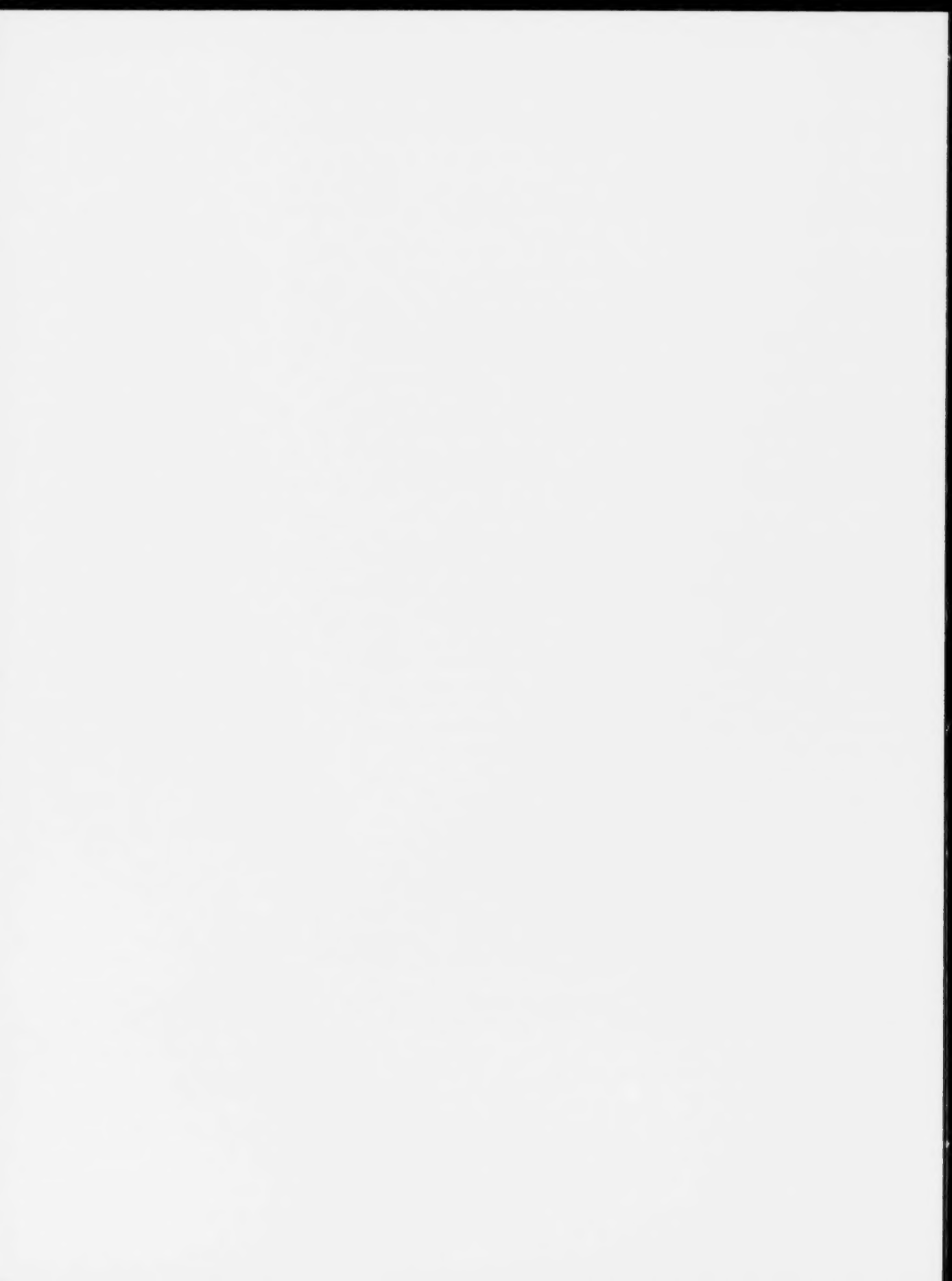
1.7 SHORT-TERM OUTLOOK FOR EXPLORATION AND DEPOSIT APPRAISAL SPENDING IN CANADA

The analysis of three key indicators (drilling, claim staking and, in particular, spending) leads to the conclusion that Canada is in the midst of a record-setting period in its mineral exploration and mining history. With early indications that the 2007 forecast of more than \$2.5 billion will hold true, and perhaps even be exceeded, one has to wonder about how long this upward trend can be sustained. Of course, the answer is very closely linked to the global economic outlook and to continued strength in commodity markets.

In Canada, this growth period has been characterized by an emphasis on off-mine-site and exploration-phase spending, both inside and outside of traditional mining camps. Exploration

and deposit appraisal activities have also been widely distributed among various mineral commodity targets and regions. Junior mining companies now play the leading role on the Canadian mineral exploration scene and bear a lot of the risk and responsibility for shaping the future of Canada's mining industry.

Overall, the year 2008 should be another excellent year for the Canadian mineral exploration industry. However, concerns are starting to be expressed more frequently about the longer-term performance of metal prices, the continued availability of equity financing, and the rising costs of exploration work. The need to have this outstanding exploration effort produce significant discoveries and additions to Canada's inventory of mineral resources and reserves is also an important consideration.



2. Regional Outlook

2.1 INTRODUCTION

This section presents comments from provincial and territorial officials on recent exploration and deposit appraisal activities in their respective jurisdictions and indicates their expectations for 2007 and beyond. It also highlights important fiscal, regulatory, and geoscientific initiatives.

The reader should note that some provinces/territories, in their respective review of activities, use the term "exploration" in its broad sense; that is, it includes both exploration (grassroots) and deposit appraisal (advanced) components. The expenditure data mentioned by the different provincial and territorial authorities may also differ from those reported in Chapter 1 (official federal-provincial/territorial figures released by NRCan) because some of these jurisdictions use different criteria or definitions in their own analyses.

2.2 NEWFOUNDLAND AND LABRADOR⁷

Overview

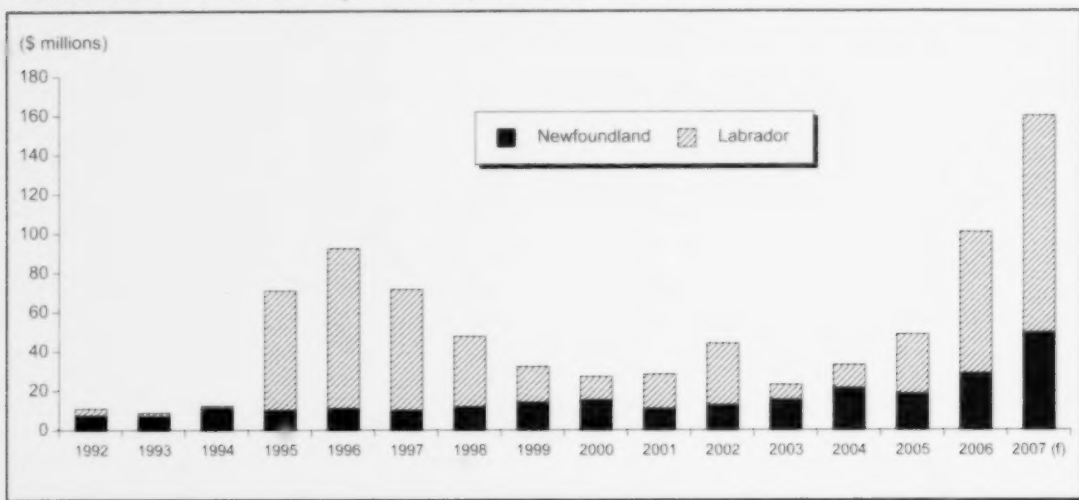
Newfoundland and Labrador experienced a record high in exploration expenditures in 2007, and a second best year ever for claims staked, the latter surpassed only in 1995, which was the unprecedented year following the Voisey's Bay discovery. These stellar results encompass a diverse portfolio of exploration projects, including uranium, nickel and iron in Labrador, and polymetallic massive sulphides, gold and uranium in Newfoundland. The positive momentum in recent years has been stimulated by strong metal prices and is underpinned by the fundamental attributes of highly prospective geology, a vigorous junior exploration and prospecting community, attractive incentive programs, and easily accessible, on-line, land tenure and data retrieval systems.

Expenditures on mineral exploration and deposit appraisal in Newfoundland and Labrador are forecast to rise to about \$160 million in 2007, up from \$100 million in 2006 (**Figure 12**). The breakdown is expected to be about \$110 million in Labrador and \$50 million on the island. The increase can be largely attributed to advanced exploration projects for uranium and nickel in Labrador and to base metals on the island. The largest expenditure class by commodity for 2007 is base metals, at about \$85 million, and the next is uranium, at \$60 million. Both numbers are about double the comparable numbers for 2006. Expenditures for gold, at about \$7 million, have been steady in recent years.

New claim staking in 2007 also reached its highest level in recent years (**Figure 13**). At present, there are 41 422 new claims in Labrador and 34 303 in Newfoundland, for a total of 75 725 new claims. There are 186 481 claims in good standing in the province.

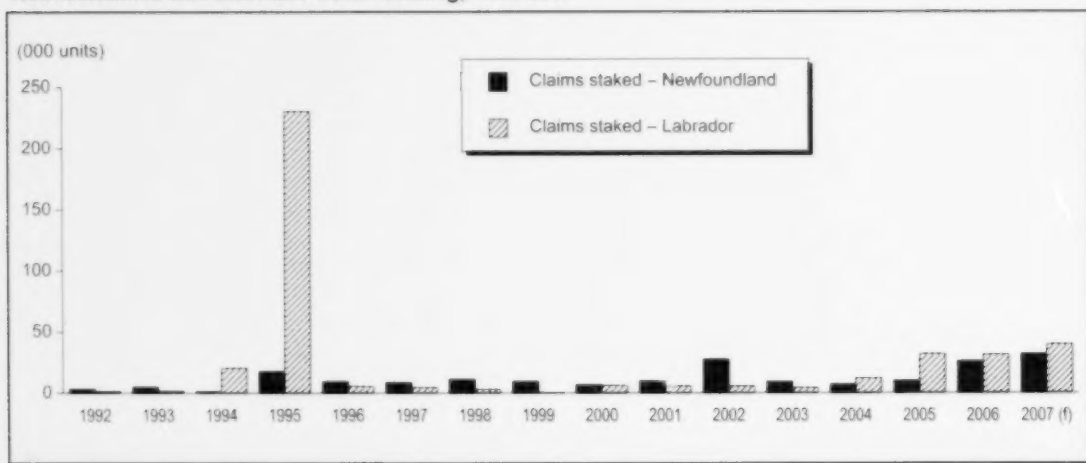
⁷ The Newfoundland and Labrador review of activities was prepared by Phil D. Saunders. For more information, the reader is invited to contact Mr. Saunders by telephone at 709-729-5748 or by e-mail at philsaunders@gov.nl.ca.

Figure 12
Newfoundland and Labrador Exploration Expenditures, 1992-2007



Source: Newfoundland and Labrador Department of Natural Resources.
 (f) Forecast.

Figure 13
Newfoundland and Labrador Claim Staking, 1992-2007



Source: Newfoundland and Labrador Department of Natural Resources.
 (f) Forecast.

With a major expansion of iron ore production planned for Labrador West, new mines at Voisey's Bay and Duck Pond, near-term production anticipated at Pine Cove and Beaver Brook, and a pipeline of advanced projects at the pre-feasibility stage, Newfoundland and Labrador looks forward to another year of strong growth in 2008.

2007 Development Projects

Voisey's Bay Nickel Company Ltd. (VBNC) began mining the Ovoid nickel, copper and cobalt deposit during September 2005. VBNC's parent company, Vale Inco Limited, reported that during the first two quarters of 2007 the mine produced 26 000 t of nickel, 21 000 t of copper, and 551 t of cobalt.

As part of the project's Development Agreement, VBNC has committed to constructing a commercial nickel-processing plant in Newfoundland. One option is a hydromet plant; however, if this does not prove to be technically or economically feasible, a matte plant will be constructed. The plant will have the capacity to produce 50 000 t of finished nickel annually with associated copper and cobalt products. VBNC is currently working on the feasibility study for the plant and has delivered the Environmental Impact Statement. The company is required to inform government of its decision on the plant option by November 15, 2008.

At Teck Cominco's Duck Pond copper-zinc mine located in central Newfoundland, mill commissioning commenced in January 2007 and commercial production was achieved in April 2007. Annual production is expected to be 76 million lb of zinc, 41 million lb of copper, 536 000 oz of silver, and 4100 oz of gold from 2007 to 2014.

Since underground work commenced in early 2005, 6587 m of mine development have been advanced with a total of 2586 m completed in 2007. Also during 2007, a detailed underground definition drilling program at the Duck Pond deposit totaled approximately 37 000 m, while peripheral surface infill diamond drilling programs at the Duck Pond and Boundary deposits totaled 6200 m and 910 m, respectively.

The Iron Ore Company of Canada approved a \$60 million capital expenditure for its Labrador West operations to expand the annual concentrate capacity from the current 17 Mt to 18.4 Mt by mid-2008.

In July 2007, Anaconda Mining Inc. began construction of its new open-pit gold mine at Pine Cove in north-central Newfoundland. Pine Cove hosts probable reserves of 2 332 676 t grading 2.76 g/t gold for 207 000 oz of gold. Inferred resources total 66 700 t grading 2.43 g/t gold for 5200 oz of gold. These reserves and resources were prepared using a cut-off grade of 0.95 g/t gold. Mine production is expected to begin in January 2008 at a rate of 500 t/d.

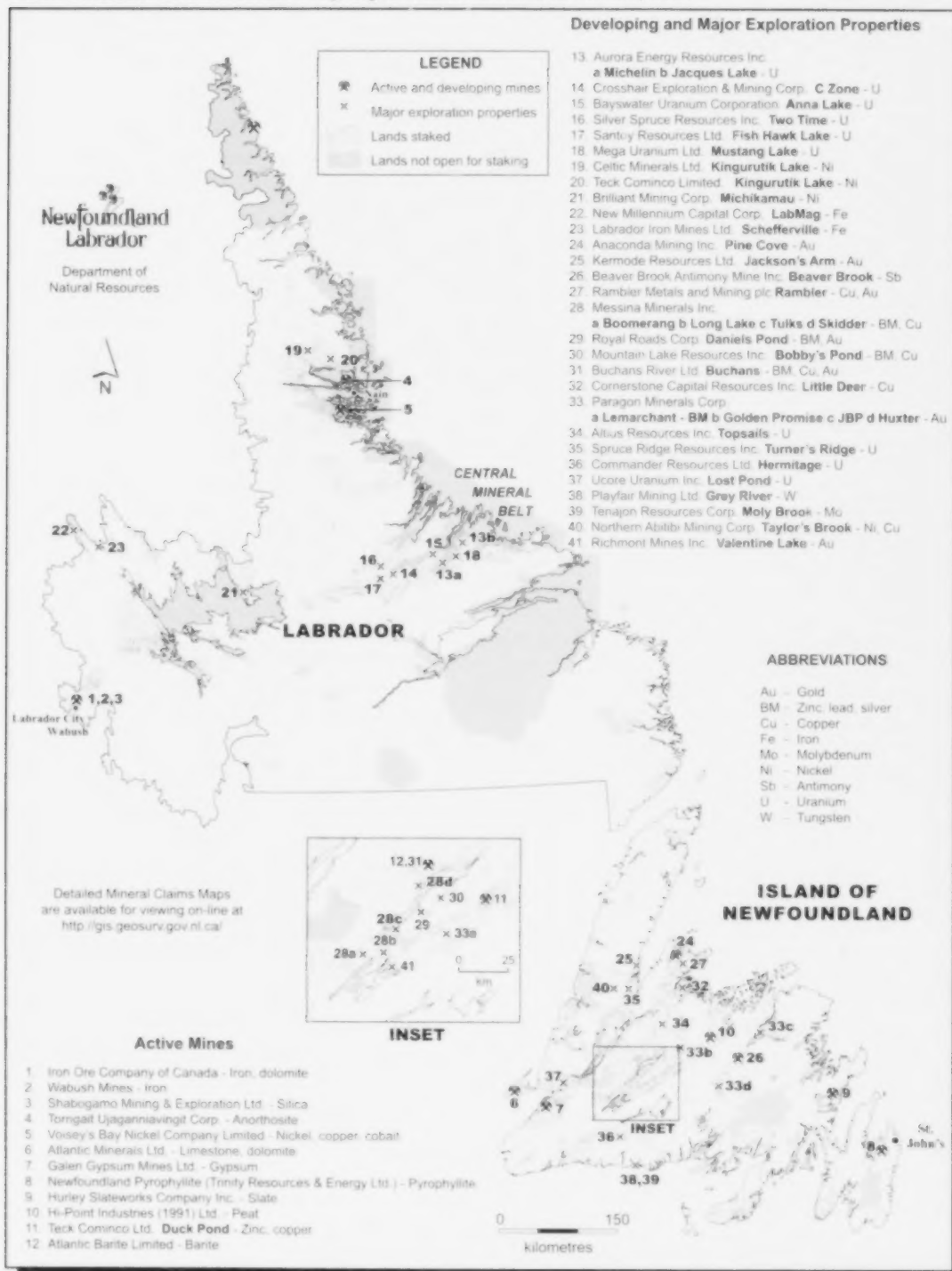
Crew Gold Canada Ltd. acquired the Nugget Pond processing facility on the Baie Verte Peninsula from New Island Resources in October 2006. Crew Gold is using the facility to process ore from its Nalunaq gold mine in southwestern Greenland. Ore shipments began in February 2007 and, in April, the company re-commissioned the Nugget Pond mill and poured the first gold bar from Nalunaq ore.

With increasing prices for antimony, Beaver Brook Antimony Mine Inc. is working toward re-opening the Beaver Brook mine near Glenwood, Newfoundland. Dewatering was completed in 2007 and underground rehabilitation is in progress.

2007 Exploration Highlights – Labrador

Following the trend of recent years, exploration in Labrador in 2007 has focused on uranium, nickel, and iron ore. New uranium and nickel discoveries have generated significant staking, particularly for uranium in south and central Labrador and for nickel northwest of Voisey's Bay. Major project areas are shown in **Figure 14**.

Figure 14
Newfoundland and Labrador Property Location and Land Tenure, 2007



Source: Newfoundland and Labrador Department of Natural Resources.

Uranium

Expenditures on uranium exploration in Labrador have increased dramatically each year since 2004. Most of the activity is focused on the Central Mineral Belt (CMB) in east-central Labrador and in 2007 ranged from extensive airborne surveys and follow-up to deposit appraisal at several advanced projects.

Aurora Energy Resources Inc. is exploring an area of about 800 km² in the CMB. On February 13, 2007, Aurora published an NI 43-101-compliant resource estimate totaling 96 million lb of U₃O₈ (measured, indicated and inferred) for the Michelin and Jacques Lake deposits. Aurora is conducting a planned 75 000-m drilling program with the objectives being: 1) to expand the size of the known deposits; 2) to convert inferred resources to measured and indicated resources; and 3) to discover new deposits in the district. Aurora is also conducting environmental, engineering and metallurgical studies to be incorporated in an ongoing pre-feasibility study.

Highlights of Aurora's regional exploration include the discovery of new mineralized zones at shallow depth about 15 km west of the Jacques Lake deposit. These new zones of bedrock mineralization, collectively referred to as Aurora West, are exposed intermittently over a strike length of 1.5 km. Intersections up to 0.48% U₃O₈ over 0.5 m and 0.11% U₃O₈ over 2.0 m were reported. These zones are interpreted to be part of the same overall mineralized structure, referred to as the Aurora Corridor, which hosts the Jacques Lake deposit and other drill-ready targets, such as Gayle, Kathi, and Burnt Brook.

Aurora has also confirmed and expanded a new zone, the Eastern Shoot, 250 m east of the high-grade Main zone at Michelin. The Eastern Shoot occurs within the same mineralized horizon as the Main zone and displays similar characteristics and geometry. The Eastern Shoot has now been traced over a strike length of 200 m and to a vertical depth of 610 m starting at surface, and remains open in all directions. The best reported intersection to date is 0.24% U₃O₈ over 10.1 m.

Crosshair Exploration & Mining Corp. is exploring a 750-km² property in the CMB. On July 31, 2007, Crosshair announced an updated, NI 43-101-compliant total resource estimate for its major prospect, the C zone, of 7.78 million lb of U₃O₈ (indicated and inferred). Crosshair is conducting a planned 40 000-m drilling program, which is designed to expand the resource at the C zone, and is exploring other uranium targets on the property, including Area 1, Moran Heights, and Croteau Lake. Highlights from drilling include intersections of 0.20% U₃O₈ over 22.4 m as part of a wider zone grading 0.10% U₃O₈ over 46.3 m from an infill hole in the C zone, and 0.10% U₃O₈ over 45.7 m from a step-out hole that extends the C zone to the northeast beyond the existing resource base.

Bayswater Uranium Corp., the largest landholder in the CMB with interests in 4626 km², is conducting a drilling program on a number of prospects and targets. At last report, 62 drill holes totaling approximately 13 000 m had been completed on the Stipek A, Stipek E, Anna Lake, Kanairiktok Bay, and Dandy uranium targets, as well as on a new prospect discovered this year north of the Anna Lake prospect. Encouraging results include an intersection grading 0.07% U₃O₈ and 0.022% molybdenum over 40 m, including 0.12% U₃O₈ over 5 m and 0.15% U₃O₈ over 6.0 m on its Anna Lake prospect.

Silver Spruce Resources Inc. conducted follow-up prospecting and drilling on its 3100-km² land holdings in the CMB during 2007. Its main prospect, the Two Time zone, has been traced by drilling over a strike length of 475 m and remains open. Definition drilling is currently being conducted to allow calculation of an NI 43-101-compliant resource estimate, anticipated for the first quarter of 2008. A new showing called Firestone was discovered approximately 8 km to the southeast of the Two Time zone. The showing covers an area 250 m by 600 m of pervasively hematitised, brecciated granitoid rocks that have highly anomalous scintillometer readings. Boulders with values over 1.0%

U₃O₈ have been found near the zone. Another new showing, termed the T-649, with five grab samples from bedrock containing an average of 0.497% U₃O₈, was discovered on the Mount Benedict property just east of the CMB.

Santoy Resources Ltd. conducted a 15-hole, 1642-m drilling program on its 100%-owned Anomaly 7 property in the CMB. Uranium mineralization was intersected in several holes in the Fish Hawk Lake South zone. Best assays included 0.181% U₃O₈ over 4.50 m and 0.106% U₃O₈ over 9.92 m in hole FHLS-07-03, and 0.419% U₃O₈ over 3.28 m in hole FHLS-07-09.

During the summer of 2007, Mega Uranium Ltd. entered the CMB uranium play through the acquisition of Monster Copper Corporation and Northern Lenora Resources Ltd., and through option and joint-venture agreements with Santoy Resources Ltd. Mega completed lake water and sediment sampling of its new properties in 2007. Preliminary results have revealed anomalies that are being field-checked. A 2000-m drilling program on the Mustang Lake property, in a joint venture with Santoy, began in late September.

Other uranium projects in the CMB and in western and southeastern Labrador are in earlier stages of exploration and some are expected to be drilled in 2008.

Nickel

In northern Labrador, Celtic Minerals Ltd. reported a new nickel discovery on its Kingurutik property 85 km northwest of the Voisey's Bay mine. A grab sample from outcrop at the Toll prospect was reported to contain 1.09% nickel, 0.20% copper, 0.15% cobalt, and 0.343 g/t palladium. Since the discovery, Celtic has completed ground UTEM surveys and a 38-hole, 6769-m drilling program. About 6500 claims were staked in the area in the months following the discovery.

East of the Celtic property, Benton Resources Corp. is exploring the Kingurutik Lake property in a joint venture with Teck Cominco Limited. An airborne magnetic-electromagnetic survey was completed early in 2007. Follow-up prospecting led to the discovery of several new showings, and analyses from initial grab samples returned values of up to 6.0% copper, 1.18% nickel, and 0.26% cobalt.

In central Labrador, Brilliant Mining Corp. completed ground electromagnetic and magnetic surveys, and 1105 m of drilling, on its Michikamau nickel property. Multiple zones of nickel mineralization were intersected, including a best intercept of 11.3 m grading 0.71% nickel, 0.45% copper, and 0.12% cobalt at the Juno target.

Iron Ore

There is renewed interest in exploration for iron ore in western Labrador, reflecting the increase in iron ore prices. In 2007, New Millenium Capital Corp. completed infill drilling and provided an updated resource estimate for its LabMag property in the Howells River area near Schefferville. The deposit is estimated to contain a total resource (measured plus indicated) of 4.59 billion t with the following characteristics: 25.92% DTWR (Davis Tube Weight Recovery), 29.45% Fe (head), 69.98 % Fe (concentrate), and 2.15% SiO₂ (concentrate).

Elsewhere in the region, Labrador Iron Mines Limited (LIM) is re-evaluating past-producing iron ore deposits in the Schefferville area. LIM has completed a pre-feasibility study on its property, which was formerly operated by the Iron Ore Company of Canada (IOCC). The property contains historical resources estimated at approximately 100 Mt of iron ore. This estimate, calculated by IOCC, is not compliant with NI 43-101 and drilling is planned to upgrade the historical resource to these standards.

2007 Exploration Highlights - Newfoundland

On the Island of Newfoundland, base metals and gold accounted for more than 80% of projected exploration spending in 2007, the majority of this in the central part of the island. There has also been growing interest in tungsten, molybdenum and antimony, with several historic deposits and prospects being re-evaluated. Project areas are shown **Figure 14**.

Base Metals

The opening of the Duck Pond copper-zinc mine, combined with recent base-metal discoveries and continuing strength in base-metal prices, has spurred exploration for polymetallic massive sulphides in central Newfoundland. New resource estimates have been published on several deposits in 2007, and other projects are in the advanced drilling stage.

Rambler Metals and Mining plc continued to advance its exploration program at the former Rambler copper-gold mine near Baie Verte. The 2007 drilling program focused primarily on delineation of the Ming Deposit, Ming Footwall and 1807 zones. An ongoing program of dewatering of the old mine workings was sufficiently advanced to begin underground drilling in the fourth quarter of 2007.

The 2007 drilling featured intersections of very high-grade copper and gold from the Ming and 1807 zones. These include 17.65% copper with 3.5 g/t gold over 2.6 m at Ming West, and 5.9% copper with 1.5 g/t gold over 14 m in the 1807 zone. The Ming Footwall zone continues to yield thick intersections of significant grade, including 26.8 m averaging 2.0% copper and 0.09 g/t gold, and 70.5 m of 1.5% copper and 0.04 g/t gold. Drilling continues and an NI 43-101-compliant resource estimate is expected to be published in 2008.

Messina Minerals Inc. is evaluating several polymetallic massive sulphide deposits on its extensive land holdings in central Newfoundland. Exploration and infill drilling in early 2007 on the Boomerang deposit and the adjacent Domino and Hurricane lenses led to an NI 43-101-compliant resource estimate published in June. Using a 1% zinc cut-off, the Boomerang deposit has indicated mineral resources of 1.36 Mt grading 7.09% zinc, 3.00% lead, 0.51% copper, 110.43 g/t silver, and 1.66 g/t gold, and a further 278 100 t of inferred mineral resources grading 6.72% zinc, 2.88% lead, 0.44% copper, 96.53 g/t silver, and 1.29 g/t gold. The Domino lens, adjacent to Boomerang and interpreted to be the same mineralized horizon, hosts another 411 200 t of inferred mineral resources grading 6.3% zinc, 2.8% lead, 0.4% copper, 94 g/t silver, and 0.6 g/t gold.

At the Long Lake Main zone, located 18 km east of the Boomerang zone, Messina is drilling to provide sufficient density of data to permit a resource estimate. Results from 15 holes have been released to date, including an intersection of 15.7% zinc, 3.8% copper, 2.7% lead, 68 g/t silver, and 1.2 g/t gold over 2.1 m.

Messina also drilled six holes at the Long Lake East zone, located about 1 km east of the Long Lake Main zone. The highest grade obtained was from a 0.5-m interval assaying 29.0% zinc, 0.4% lead, 1.3% copper, 28 g/t silver, and 1.0 g/t gold. Massive sulphides at the East zone target have now been intersected over a 300-m strike length and over a 200-m vertical range.

Messina is exploring the Tulks East prospect located 20 km northeast of the Boomerang deposit. The Tulks East prospect is comprised of two parallel massive sulphide zones: the at-surface B zone and the larger and slightly deeper A zone. Results of 13 holes have been reported to date. Highlights include intersections of 3.92 m assaying 10.8% zinc, 1.3% lead, 0.7% copper, 45 g/t silver, and 0.6 g/t gold, and 3.6 m grading 10.1% zinc, 2.3% lead, 0.5% copper, 142 g/t silver, and 1.0 g/t gold, both from the B zone. The new drilling confirms the continuity and grade of B zone mineralization over a strike length of 85 m and from surface to a vertical depth of 110 m; it is expected to permit a resource estimate covering the B zone and part of the A zone.

Elsewhere, on the historic Skidder copper-zinc prospect, located 15 km southwest of the mining town of Buchans, Messina has completed an airborne electromagnetic survey and drilled 10 holes. The drilling returned intercepts of 13.0 m assaying 2.1% copper and 1.8% zinc, and 6.54 m assaying 2.8% copper and 2.4% zinc.

In February 2007, Mountain Lake Resources Inc. reported an updated NI 43-101-compliant mineral resource estimate for its Bobby's Pond deposit in central Newfoundland. The new estimate lists a total resource (indicated plus inferred) of 1.34 Mt at a grade of 6.32% zinc, 0.98% copper, 0.48% lead, 18.2 g/t silver, and 0.22 g/t gold.

In January, Mountain Lake reported high-grade intercepts from two holes drilled to undercut the deposit at depth. These include 16.07% zinc and 1.75% copper over 6.0 m in hole MOA06-020, and 7.71% zinc and 1.1% copper over 11.0 m and 9.56% zinc and 0.51% copper over 7.5 m in hole MOA06-022. Deep drilling resumed in September.

Mountain Lake and Cornerstone Capital Resources Inc. signed an option and joint-venture agreement on Cornerstone's Bobby's Pond claims, which extend northeast and southwards from the Bobby's Pond mining lease. Cornerstone's claims host volcanogenic massive sulphide-style alteration, and mineralization intersected in widely spaced drill holes completed by Inco Limited in the late 1980s. Three holes for a total of 956 m were drilled by Mountain Lake on the property in 2007 with a best intersection of 4.7% zinc over 1.0 m in hole BPR-07-02. Downhole pulse electromagnetic surveys are planned prior to further drilling.

Royal Roads Corp. is exploring for polymetallic massive sulphide deposits on its Tulks North property in central Newfoundland. The property hosts the Daniels Pond deposit with an NI 43-101-compliant inferred resource totaling 1.69 Mt grading 8.37% zinc, 4.4% lead, 0.57% copper, 196.9 g/t silver, and 0.68 g/t gold at a 2% zinc cut-off. Royal Roads is conducting an 11 000-m drilling program in 2007 to explore for extensions to the known mineralization, to increase the level of confidence in the deposit's current resource estimate, and to upgrade as much of the resource as possible to the indicated category.

The company reported that infill drilling on the Northeast Lobe of the deposit has redefined its interpretation of the extent of the mineralization and that a reduction in the resource in this part of the deposit is anticipated. However, in deeper drilling, the first of three planned holes intersected 2.47 m grading 5.27% zinc, 2.41% lead, 0.22% copper, 116.81 g/t silver, and 0.43 g/t gold 75 m below the previously known extent of the Northeast Lobe. Drilling continues on the Daniels Pond deposit, and the company has started a 2500-m program on other priority targets on the property.

Buchans River Ltd. is exploring a large land package in central Newfoundland that includes the former-producing, high-grade Buchans zinc-lead-copper-silver-gold orebodies. In August, the company completed a six-hole 850-m drilling program on the historic Little Sandy prospect east of Buchans. The best results were from hole LS-07-17, which intersected 9.30 m assaying 1.80% copper, including 3.9 m at a grade of 3.21% copper.

Buchans River has reported that in researching the archived files of Asarco Inc., the former Buchans Mine operator, it discovered an uncategorized resource estimate for a zone of mineralization peripheral to the former Lucky Strike mine. This resource estimate suggested a total of approximately 11.8 Mt with an average grade of 1.83% zinc, 0.67% lead, 0.38% copper, 5.5 g/t silver, and trace gold. Buchans River is planning a drilling program for early 2008 to bring this historic resource to NI 43-101-compliant status.

Buchans River is conducting deep-penetrating magnetotelluric and induced polarization surveys on the property. The surveys cover a 3.6- by 5.1-km portion of the Buchans mining camp covering several past-producing orebodies. The company has also started an eight-hole, 4000-m drilling program on targets identified by Billiton Resources Canada Inc. in 2001. The holes are targeting

areas considered to be geologically favourable to host high-grade massive sulphide deposits analogous to the former Lucky Strike mine, which yielded historical production totaling 4.7 Mt averaging 18.36% zinc, 8.42% lead, 1.67% copper, 113 g/t silver, and 1.7 g/t gold.

Paragon Minerals Corporation conducted a 2372-m drilling program at the Lemarchant prospect, located 15 km southwest of the Duck Pond copper-zinc-gold mine in central Newfoundland. The property is under option from Altius Minerals Inc. Hole LM07-15, the third of five holes, intersected 14.6 m of massive sulphide mineralization grading 9.46% zinc, 2.13% lead, 0.81% copper, 73.4 g/t silver, and 1.85 g/t gold. Hole LM07-17, located 100 m north and 90 m west of LM07-15, intersected 14.6 m grading 12.38% zinc, 2.61% lead, 0.45% copper, 50.32 g/t silver, and 0.74 g/t gold, including 8.1 m of high-grade massive sulphides with 21.04% zinc, 4.26% lead, 0.72% copper, 76.05 g/t silver, and 0.65 g/t gold. Drilling to date has outlined base-metal massive sulphide mineralization over a 300-m strike length. The mineralization is open along strike and interpreted to be open at depth.

Playfair Mining Ltd. is re-evaluating the Grey River tungsten deposit on the south coast of Newfoundland. In June, the company announced results of a new NI 43-101-compliant resource estimate for the deposit. The estimate for the No. 10 vein is 852 000 t at an average grade of 0.858% WO_3 (at a 0.20% WO_3 cut-off), for a total of 16.1 million lb of WO_3 . Playfair has initiated a scoping study to determine the economic potential of the deposit.

Cornerstone Capital Resources Inc. and Thundermin Resources Inc. have signed a letter of intent with Weyburn Investments Ltd. to option the past-producing Little Deer copper deposit and adjacent property located 10 km north of Springdale in north-central Newfoundland. Copper was mined from the Little Deer deposit during two campaigns in the 1970s. In July, the joint venture began a program of approximately 5300 m of drilling in eight to nine holes. The objective is to confirm and increase the copper mineralization, currently outlined by wide-spaced historical holes, both at depth and along strike. Results from the first five holes include an intersection of 25.5 m grading 1.24% copper, which includes a higher-grade interval of 5.5 m grading 2.5% copper.

Tenajon Resource Corp. optioned the Moly Brook property near Grey River from a group of prospectors in April 2007. Previous drilling on the Moly Brook prospect by Royal Oak Mines encountered molybdenum mineralization over significant widths, including hole FC95-01, which intersected 204.8 m with an average grade of 0.061% Mo. Tenajon has completed prospecting, soil sampling, and induced polarization surveys on the property and began drilling in September. Results are pending.

Northern Abitibi Mining Corp., in a joint venture with Altius Minerals Inc., is exploring the Taylor Brook nickel-copper-cobalt-platinum group metals (PGM) property located in western Newfoundland. Ground geophysical surveys and trenching were completed in 2007. Highlights include a 1.5-m chip sample across the massive sulphide zone at the Layden showing with values of 3.8% nickel, 1.3% copper, 0.08% cobalt, 0.16 g/t platinum, 0.24 g/t palladium, and 0.34 g/t gold. Northern Abitibi is planning a 10-hole, 1000-m drilling program for late 2007.

Spruce Ridge Resources Ltd. drilled two holes totaling 119.5 m on its Turners Ridge lead-zinc property in western Newfoundland. Hole TR-01 cut a mineralized zone with an average grade of 3.65% lead and 0.19% zinc over 12.6 m, including 7.19% lead and 0.39% zinc over 5.80 m. A zone in hole TR-02 averaged 1.47% lead over 13.8 m, including 4.12% lead over 2.1 m. A gravity survey designed to identify additional drilling targets will begin shortly.

Gold

Kermode Resources Ltd. is continuing a drilling program, started in 2006, on its Jackson's Arm gold property in western Newfoundland. Results from 46 holes have been reported to date. Highlights of

2007 drill results from various zones on the property are as follows: 6.98 g/t gold over 3.8 m in zone 31, 1.27 g/t gold over 50.8 m and 1.52 g/t gold over 23 m in the Road zone, and 4.1 g/t gold over 4.7 m in the Beaver Dam zone. The drilling program continues.

In early 2007, Paragon Minerals Corporation completed a 14-hole, 3073-m drilling program at the Golden Promise project in central Newfoundland. The property is under option to Crosshair Exploration & Mining Corp. The drilling extended gold mineralization at the Jaclyn Main zone gold prospect an additional 200 m to the east and 75 m to the west. The best assay from the program was 20.65 g/t gold over 1.60 m, including 55.03 g/t gold over 0.60 m. The Jaclyn Main zone, which is interpreted to have a moderate easterly plunge, is now known to extend over a strike length of 750 m and to a depth of 225 m. The zone is open along strike and to depth.

A planned 23-hole, 3750-m Phase 3 drilling program at Golden Promise is in progress. The program includes infill drilling and testing the down-plunge extensions of mineralization on the Jaclyn Main zone and step-out drilling on the Jaclyn North zone. Results from the first 15 holes have been reported and they include assays of 10.14 g/t gold over 1.40 m, including 35.3 g/t gold over 0.40 m at the Jaclyn Main zone and 11.3 g/t gold over 0.30 m at the Jaclyn North zone.

In February 2007, Paragon Minerals Corporation completed a nine-hole 2107-m drilling program on its 100%-owned JBP Linear property located 15 km northwest of Gander. Previous drilling on the property identified a significant, gold-bearing vein system at the H-Pond and Pocket Pond prospects. The current drilling program was designed to further define the H-Pond zone and to test a new area where a high-grade quartz float occurrence assaying up to 798.87 g/t gold was discovered in December 2005. The better assays received in the present program include 12.29 g/t gold over 1.05 m within a broader zone grading 6.15 g/t gold over 2.30 m. An induced polarization survey was completed over the property in the summer, and a second round of drilling (1500 m) designed to test targets defined by the survey was initiated in September 2007.

Paragon also completed a seven-hole, 1805-m drilling program at the Huxter Lane project, located 60 km south of Grand Falls-Windsor. The property is under option to Meridian Gold Inc. Previous drilling outlined a significant mineralized gold-bearing porphyritic intrusion, the Mosquito Hill zone, over a strike length of 450 m. The 2007 drilling program extended the known gold mineralization of the Mosquito Hill zone over a strike length of 750 m and to a vertical depth of 125 m. The mineralized porphyry typically contains up to 15% disseminated and vein-hosted arsenopyrite-pyrite mineralization. The porphyry remains open along strike and to depth. Highlights of the drilling include an intersection of 2.00 g/t gold over 16.85 m and 0.67 g/t gold over 103.35 m.

Richmont Mines Inc. completed an eight-hole drilling program on its Valentine Lake gold property in south-central Newfoundland. Richmont is earning an interest in the property from Mountain Lake Resources Inc. The new drilling tested targets defined in previous surveys, including a new airborne survey completed in June. Anomalous gold mineralization was intersected in one hole that returned 1.2 g/t gold over 7 m, including 8.3 g/t gold over 0.9 m. Several targets remain to be tested in addition to the main zone of the Valentine Lake property, which contains inferred resources of 1.31 Mt at 8.50 g/t gold (cut at 58 g/t gold) for a total of 359 480 oz of gold.

Uranium

Commander Resources Ltd. is exploring for uranium on a large claim group covering much of the Hermitage Flexure in southern Newfoundland. The property contains several uranium occurrences discovered by a previous operator during the 1980s and by Commander since 2005. Commander completed a drilling program on various showings within the property in early June. Anomalous values of up to 0.10 and 0.11% U_3O_8 over 0.4-m intervals were intersected in two holes on the Doucette prospect. Anomalous results were also obtained from the He2, Blue Hills, Troy's Pond, and ST-129 targets. Further exploration, including induced polarization surveys, trenching, and prospecting, is ongoing.

Ucore Uranium Inc. is exploring its 1646-claim Lost Pond property in western Newfoundland. In May, the company completed an 11-hole, 1165-m drilling program designed to test the depth extensions of surface showings identified in 2006. The best uranium values were obtained from a hematite-magnetite-altered and brecciated zone that assayed 0.045% U_3O_8 over 12.3 m, including 0.432% U_3O_8 over 0.5 m; several narrower zones were also intersected.

In October, Bayswater announced it has optioned the 38 970-ha Wisker Valley property in north-central Newfoundland. Grab samples from a newly discovered showing on the property have yielded assays grading up to 0.86% U_3O_8 , with several other samples containing greater than 0.1% U_3O_8 . Mineralization is hosted in a 25-km-long belt of felsic pyroclastic rocks associated with regional radiometric and magnetic anomalies.

Altius Resources Inc. and JNR Resources Inc. have established an alliance to explore for volcanic-hosted uranium deposits in central Newfoundland, and have staked 10 584 claims south of the Wisker Valley property. The new claims cover felsic volcanic and related intrusive rocks of the Topsails Igneous Suite and the Springdale Group, both of which feature very large areas of anomalous uranium, molybdenum, and fluorine in lake sediment. Altius and JNR plan to conduct prospecting and geological mapping following a combined airborne radiometric and magnetic survey to identify new exploration targets.

Spruce Ridge Resources Ltd. reported a new uranium discovery made by prospectors on its Turner's Ridge property in northwestern Newfoundland. The Determination zone occurs in outcrop over an area of 110 m by 22 m. The assay results from 11 grab samples ranged from 0.04% to 0.27% U_3O_8 , with an average of 0.16% U_3O_8 . The Determination zone was discovered during follow-up of radiometric anomalies located by an airborne magnetic-electromagnetic-gamma-ray spectrometer survey. Drilling on the Determination zone has been rescheduled for October so that a larger drill rig can be employed.

Spruce Ridge also drilled 890 m in 15 holes on its Deer Lake Basin uranium property in western Newfoundland. Multiple layers of grey, flat-lying sedimentary rock were encountered in each hole, but only low levels of uranium were detected. Elsewhere, newly discovered uranium occurrences are being drilled at Incinerator Road and the Dan zone. An airborne magnetic and radiometric survey of the property has been carried out. Interpretation of the airborne results and ground prospecting of the numerous radiometric anomalies will determine subsequent drilling targets.

Government Programs and Services

Mineral Incentive Program

The Mineral Incentive Program has a total budget of \$2.5 million for the 2007-08 fiscal year with allocations for three components: 1) Junior Exploration Assistance at approximately \$1.85 million, 2) Prospectors Assistance and Training at \$400 000, and 3) Natural Stone Assessment at \$250 000.

Junior Exploration Assistance supports independent junior exploration companies or individuals with non-refundable grants of up to \$100 000 for eligible exploration work on the Island and up to \$150 000 for work in Labrador. The funding is provided through a 50/50 cost-sharing measure for exploration work within the province. Approximately \$500 000 is allocated toward non-drilling, grassroots projects such as ground and airborne geophysical surveys and regional geochemical surveys. To date, the government has committed \$1.94 million in support of 16 projects for 2007.

Prospectors Assistance and Training supports resident prospectors through non-refundable grants of up to \$4000 for traditional, grassroots prospecting. Prospectors can also apply for an extra \$2000 for air support to access remote properties. To date, the government has committed \$190 240 in support of 52 projects for 2007.

Under the Natural Stone Assessment component, companies or individuals can receive non-refundable grants of up to \$50 000 to conduct exploration and assessment on new or undeveloped natural stone prospects. This will also include assessment of alternate uses for existing or inactive stone quarries. Funding is provided through a 75/25 (government/industry) cost-sharing arrangement. To date, the government has committed approximately \$67 000 for four projects in 2007.

As well, the Department of Natural Resources conducts an annual 14-day prospectors training course in conjunction with the College of the North Atlantic (CNA) in Stephenville. After completing this field-oriented training course, resident prospectors are eligible to apply for status as Genuine Prospectors, which enables them to stake up to 30 claims per year without having to pay the \$50 deposit per claim. The department also delivered the prospectors training course this year in Labrador in conjunction with the CNA campus in Happy Valley-Goose Bay and the Labrador Métis Association, also in Happy Valley-Goose Bay. For further information, please visit www.nr.gov.nl.ca/mines&en/programs/#financial.

Mineral Rights Administration System – On-Line Claim Staking

The Mineral Rights Administration System (Miriad), introduced in February 2005, is the centrepiece of the Mineral Lands Division's program to manage the province's mineral resources. Miriad comprises three modules: 1) on-line staking, 2) in-house mineral exploration licence maintenance, and 3) on-line mineral exploration licence inquiry. The system uses state-of-the-art technology and integrates a custom database for mineral titles management with a geographic information system and government financial management system. The on-line modules are available 24 hours a day, 7 days a week. Since its inception, approximately 174 000 claims have been staked.

Geoscience Resource Atlas

The Geoscience Resource Atlas is a collection of data layers related to mineral exploration for Newfoundland and Labrador. Combined with topographic base maps, the geoscience layers are presented in an Internet mapping application that enables viewing of information for any part of the province. The geoscience layers include bedrock or surficial geology, geochemistry, geophysics, mineral occurrences, mineral tenure, drill core, map indices, and others. Standard navigation and selection tools allow the user to view, query, and print any data available from Newfoundland and Labrador. For further information, please visit <http://gis.geosurv.gov.nl.ca>.

Geofiles – On-Line Geoscience Database

The Geofiles is a collection of over 17 000 documents pertaining to the geoscience of Newfoundland and Labrador and the immediate offshore region. It includes mineral assessment reports, government published reports and maps, government open-file reports and maps, non-governmental published articles or volumes, unpublished reports and maps, and university theses. About 90% of these documents are described and searchable on-line. There are currently over 9000 mineral assessment reports in the Geofiles collection. Over 5000 of these are now completely or partially accessible on-line as pdf files. For further information, please visit <http://gis.geosurv.gov.nl.ca/minesen/geofiles>.

Targeted Geoscience Initiative (TGI)

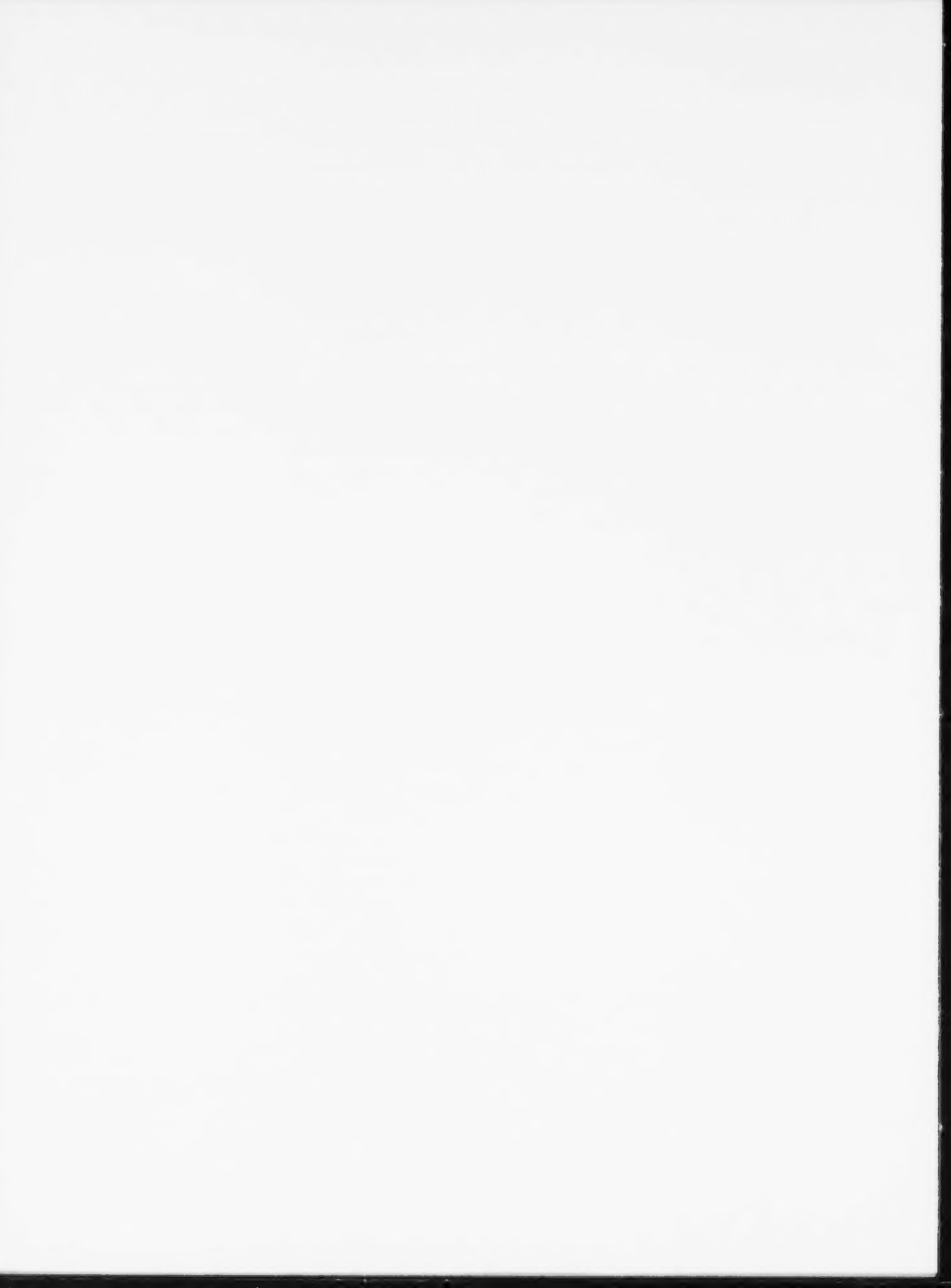
In 2007, the Geological Survey of Canada's (GSC) TGI-III Appalachian project saw work completed in both the Buchans-Roberts Arm and Baie Verte historic mining camps. A highlight of this program was the completion of high-resolution aeromagnetic surveys in both regions, jointly funded by the GSC and the Province of Newfoundland and Labrador, the results of which were published in 2007. Data may be retrieved on-line at <http://gis.geosurv.gov.nl.ca>. TGI-III field work in both areas entailed bedrock mapping and metallogenic studies, as well as geochronological and geochemical

research to test correlation of mineralized units. A till geochemical sampling program was also completed in central Newfoundland. Office components included GIS compilation of all historical data from the Baie Verte peninsula.

Aboriginal Issues

On April 2, 2007, the Department of Natural Resources, Government of Newfoundland and Labrador, announced new standards, negotiated with the Nunatsiavut Government, for mineral exploration on Inuit Lands in Labrador. The new regulations only apply to the Labrador Inuit Land (LIL) component of the Labrador Inuit Settlement Area (LISA). The new regulations are posted on the Department of Natural Resources' web site at www.nr.gov.nl.ca/mines&en/mqrights/ExplorationStandardsforLabradorInuitLands.pdf.

Negotiations with the Innu Nation of Labrador continued through 2007 with the objective of reaching an AIP (agreement in principle) and a land claims selection. As of the time writing, no formal land selection proposal had been tabled by the Innu Nation, but this is expected within the near future. Once concluded, a land claims agreement should provide greater certainty for resource exploration by more clearly establishing the regulatory regime(s) that will apply to such activity in specific regions of Labrador.



2.3 NOVA SCOTIA⁸

Introduction

In 2007, mineral exploration activity in Nova Scotia continued on the upward trend that started in 2003. Exploration expenditures for 2007 were just short of \$10 million, a significant increase from 2006. The total area under exploration licence in 2007 stood at 1 853 080 acres, a total of 46 327 claims under 1198 licences. Diamond-drilling activity for 2007 remained very strong with 28 000 m in bedrock and more than 2600 m of percussion drilling (**Table 13**). Gold exploration is always at the top of the commodity list in Nova Scotia, a legacy of 64 past-producing gold districts and several hundred other known occurrences in the province. In 2006 and 2007, however, base metals and coal also attracted significant activity on the exploration and development scene. Industrial minerals are the mainstay of the Nova Scotia mining industry, with numerous mines across the province. This sector has also seen significant exploration for commodities such as marble, quartz and silica sand, limestone, and gypsum, as well as an expansion of active operations.

According to a 2006 report by Gardner Pinfold Consulting and CRA, Nova Scotia's mining industry provides one of the highest earning levels in the provincial economy: more than \$1000 per week in 2005. This is more than 40% higher than the average of all other economic sectors in the province. Mining contributed \$400.4 million to the province's Gross Domestic Product (GDP) in 2006 through direct and spin-off industry activities. It is worth noting that the potential development of several new mining projects could more than double the 2006 GDP contribution. The report notes a total of 5260 direct and indirect jobs attributed to Nova Scotia's mining sector. The recent boom in exploration and development activities in 2006 and 2007 will undoubtedly result in a significant increase in the current number of both direct and indirect jobs.

Review of Mineral Exploration

Gold exploration and development activity is concentrated in the Cambro-Ordovician Meguma Terrane of the southern and eastern mainland. The most advanced gold project is the Touquoy project of Atlantic Gold NL, located along the Eastern Shore. The company has defined an 11.28-Mt resource for a total of approximately 654 000 oz of gold at a grade of about 1.8 g/t gold. A decision from the Nova Scotia Department of Environment and Labour to allow this project to proceed after environmental assessment was handed down on February 1, 2008. Atlantic Gold plans to erect a mill and process the ore mined from an open pit. The company plans to produce approximately 90 000 oz of gold annually using a cyanide recovery system. Other advanced gold projects include three high-grade lode-gold deposits (Forest Hill, Goldenville, and Tangier) and two low-grade, high-tonnage gold deposits (Beaver Dam and Cochrane Hill) in the eastern Meguma Terrane. In addition, exploration at Caribou (Scorpio Gold Corp.) and Goldboro (Exploration Orex) continues on track, while the recovery of gold from tailings at the Dufferin gold mine has been completed.

In May 2007, Nova Scotia once again became a base-metal producer with the re-opening of the ScoZinc mine, a wholly owned subsidiary of Acadian Mining Corp. The mine's projected seven-year life may be significantly increased through Acadian's purchase of the Getty deposit, located about 700 m east of the Scotia mine, and its newly discovered mineral occurrence at Carrolls Corner, located 2.5 km to the west. In addition, Merrex Gold Inc. is actively drilling the Carboniferous, fault-controlled Jubilee zinc-lead deposit on Cape Breton Island and has delineated several high-grade mineralized zones over close to 2 km of strike length. Intersections exceeding 40% combined zinc and lead have been reported from recent drilling results.

⁸ This review of activities was prepared by Paul K. Smith, Liaison Geologist, Geological Services Division, Nova Scotia Department of Natural Resources. For more information, the reader is invited to contact Mr. Smith by telephone at 902-424-2526 or by e-mail at pksmith@gov.ns.ca.

TABLE 13. DRILLING ACTIVITY IN NOVA SCOTIA, 2004-07

	2004	2005	2006	2007
	(metres)			
Core drilling	18 500	11 000	17 000	28 000
Percussion drilling	3 400	5 600	25 000	2 600
Total drilling	21 900	16 600	42 000	30 600

Source: Nova Scotia Department of Natural Resources.

Coal basins of the northern mainland and Cape Breton Island are again undergoing exploration for coal deposits, and interest in potential coal-bed methane production is receiving major attention.

The gypsum mining industry has been, and remains, strong in Nova Scotia with the province's five producers operating at full capacity and one embarking on a major expansion. Both salt and aggregate production remains stable, although demand for high-quality aggregate for export remains extreme.

Gold

Gold is always near the top of the exploration radar screen in Nova Scotia, especially as the price hovers close to \$1000 per ounce. At the top of the list for 2007 with regard to bringing a new gold property into production was Atlantic Gold NL (trading on the Australian Stock Exchange as ATV). This company, under its wholly owned subsidiary, Diamond Ventures Inc., went through feasibility study, full environmental assessment, and then an environmental focus report on its slate-hosted, disseminated, Touquoy gold deposit at Moose River Mines near Upper Musquodoboit. Final approval for the project was granted by the Department of Environment on February 1, 2008. At present, Atlantic reports that this deposit contains 654 000 oz of gold at a grade of 1.8 g/t gold. Atlantic has also entered into an agreement with Scorpio Mining Corp. on the Cochrane Hill gold deposit located in the eastern Meguma Terrane. Both reconnaissance Rotary Air Blast (RAB) and surface drilling along the extension of known mineralized zones have proved encouraging as the company looks for additional sources of ore destined for its proposed mill at Moose River.

Acadian Mining Corp. currently holds, and is actively exploring, more gold properties than all other companies combined in Nova Scotia. In addition to the joint venture with Atlantic, Acadian has been very active in several other gold properties in the province. The company currently holds, by joint venture or sole ownership, several significant gold properties, including some of the more significant past-producing gold districts. These include Goldenville, Forest Hill, Tangier, Upper Seal Harbour, Beaver Dam, and Killag. Collectively, their properties have an uncut measured and indicated resource of 838 000 oz of gold and an inferred resource of 1 235 000 oz of gold. Active exploration has been under way by Acadian Mining on its advanced properties (Forest Hill, Goldenville, Tangier, and Beaver Dam) since 2003. Emphasis is currently being placed on the Beaver Dam deposit, where the company has identified a large gold resource and is moving towards an environmental assessment for an open-pit operation.

Orex Exploration Inc. re-organized and refinanced its exploration efforts in 2007 in order to carry out compilation, surface exploration, and core drilling on its Goldboro gold property. The company intends to complete infill drilling for compliance of its resource. The program is currently well financed and will continue with a preliminary evaluation of the East Gold Brook property located immediately to the east of the Goldboro site.

IOCG Deposits

Exploration for iron oxide-copper-gold (IOCG) deposits along the Cobequid-Chedabucto Fault Zone continued in northern Nova Scotia in a big way. After fundamental data were provided by earlier joint-venture exploration by Avalon Ventures Ltd., Canstar Resources Inc., and Wallbridge Mining Company Ltd., Minotaur Atlantic Inc. staked a large land position along 80% of the entire fault in 2007. Minotaur's initial exploration efforts have focused on plans for a comprehensive gravity survey over the whole claim area.

Base and Rare Metals

Merrex Resources Inc. continues to return encouraging results from its advanced exploration project at the carbonate-hosted, Jubilee lead-zinc property at Little Narrows, Cape Breton Island. Drilling has resulted in both the extension of the existing mineralized zone and in the delineation of several new zones. The company released a resource estimate in November 2007 that outlined a resource of 3.1 Mt grading 4.71% zinc equivalent.

A site at Egypt Road, Yarmouth County, which is adjacent to the metasediment-hosted Dominique tin-zinc-copper-indium prospect, continues to be explored by claim holder John Wightman for its potential for base metals, indium, silver, tin, and rare metals. The focus of the program is to follow up geochemical indications of similar metasediment-hosted mineral occurrences in an area north and east of the mineralized zones originally discovered and explored by Shell Canada Resources at Dominique between 1977 and 1979.

Coal-Bed Methane

Strong interest has been shown in the potential for coal-bed methane in the thick coal seams of the Stellarton and Cumberland basins of northern Nova Scotia. In the Stellarton sub-basin alone, it is estimated that approximately 500 billion cubic feet of the resource exist down to a 1200-m depth. Stealth Ventures Ltd. has acquired 24 000 acres in two blocks for exploration, one in Stellarton and one in the Springhill area. Stealth is actively exploring and developing state-of-the-art, deep lateral drill holes to extract gas from the coal seams, and several commercial operations are now utilizing gas for domestic heating.

Coal

The Donkin Coal Alliance, which includes Switzerland-based Xstrata Coal and Nova Scotia-based Erdene Gold, completed de-watering and rehabilitation of the two tunnels at the Donkin deposit that were excavated by DEVCO in the 1980s. The Alliance conducted additional advanced exploration activities, including drilling, sampling and analysis, before they make a production decision in late 2008. The Donkin deposit, delineated in the early 1980s by DEVCO, has an estimated 1.9 billion t of coal resource from five seams. An independent resource study in early 2007 confirmed a coal resource in excess of 227 Mt indicated and 254 Mt inferred. The Alliance has indicated that annual production for the coal deposit could be in excess of 5 Mt. At current prices, this project alone has the potential to double the value of mineral production for the province.

Pioneer Coal continues to produce coal at its surface coal mine reclamation project at Point Aconi, Cape Breton County. The company plans to extract approximately 1.6 Mt of coal over a seven-year period.

In Pictou County, Pioneer Coal Ltd. has operated the Stellarton surface coal mine since 1996, producing approximately 220 000 t/y. The provincial government continues to promote this partnership between the municipality, the private sector, and the province as a model of how reclamation mining can provide economic activity to an area and, at the same time, convert lands that were previously an environmental and public hazard into productive lands for future generations.

Industrial Minerals

Black Bull Resources Inc. restructured its organization to take advantage of marketing opportunities and, as a result, is increasing the size of its processing plant. Initial results suggest that the company is about to experience a major rebound after securing several significant new markets in the United States. Based on the latest diamond drilling program, company data currently identify a total measured and indicated quartz resource of 12.1 Mt grading 97.4% SiO₂, and an additional 16 Mt of inferred quartz resource. The total measured and indicated kaolin resource is 4.8 Mt grading 24.2% kaolin, with an inferred kaolin resource estimated at 6.3 Mt. The zone of mineralization is open at depth and along strike.

MacLeod Resources Limited is continuing production of high-quality red marble blocks from its Kennedy's Brook quarry in southwestern Cape Breton Island. Increased demand and opening markets have led the company to double its production staff. In addition to local markets established over the last few years, blocks are currently being cut and shipped to Italy, where an Italian broker has been retained to market the product in that region. The company is also developing new markets in China where high demand for the unique product is being expressed. MacLeod Resources is also exploring for new and diverse rock types throughout the province to expand its product line.

Mining Expansions and Announcements

During 2007, several existing mines in the province initiated an expansion of active operations. Pioneer Coal Ltd. was given permission to open its newest operation at Point Aconi and is now in operation. Pioneer continued mining the eastern extension of the coal seam package that it has been mining for several years at the Stellarton open-pit operation. Reclamation work at the company's operations in both Thorburn and Coalburn has been completed.

In September 2006, Fundy Gypsum Co., a division of U.S. Gypsum Canadian Mining Ltd., announced it would spend \$10 million over the following 18 months to expand its open-pit mining operations outside the town of Windsor in central Nova Scotia. This development will ensure a further 20-year mine life and sustain its 150-160 jobs. The environmental impact report for the project will go through government review early in 2008.

Both quartz and marble production have seen significant expansion over the last year at the White Rock deposit of Black Bull Resources, located east of Yarmouth, and at the Kennedy's Brook marble mine of MacLeod Resources on Cape Breton Island.

2.4 NEW BRUNSWICK⁹

Exploration Highlights

In 2007, the exploration industry invested about \$32 million searching for metallic minerals, compared to \$13.4 million in 2006; \$36 million was expended seeking natural gas, compared to \$44 million in 2006.

Approximately 15 600 claims were staked in New Brunswick in 2007, compared to 4100 in 2006. The number of mineral claims in good standing as of November 1, 2007, was 35 160, up from 21 275 in the previous year (**Figure 15**). This exploration boom has been driven largely by increases in metal prices over the last few years.

Some 30 junior mining companies are currently exploring in New Brunswick for metals, including gold, silver, zinc, lead, copper, indium, tin, tungsten, antimony, molybdenum, and uranium. The locations of major exploration projects highlighted in this report are shown in **Figure 16**.

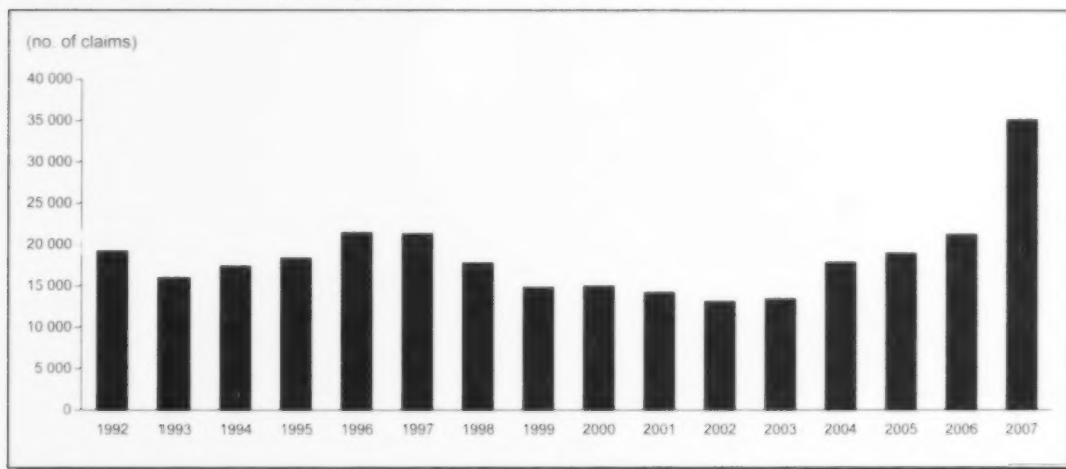
Mineral Exploration Activities

Gold

Freewest Resources Canada Inc. reported that its Clarence Stream property in southwestern New Brunswick contains more than 300 000 oz of gold and 6.4 million lb of antimony. A further 15 holes have been drilled in the East zone, including hole CS07-240, which intercepted 12.45 g/t of gold over 4.50 m. Freewest also began to probe the gold-bearing system at Clarence Stream to greater depths in the second half of 2007. Nine holes tested a one-kilometre-long portion of the shear structure that hosts a number of proximal gold deposits. Gold intercepts included 6.59 g/t over

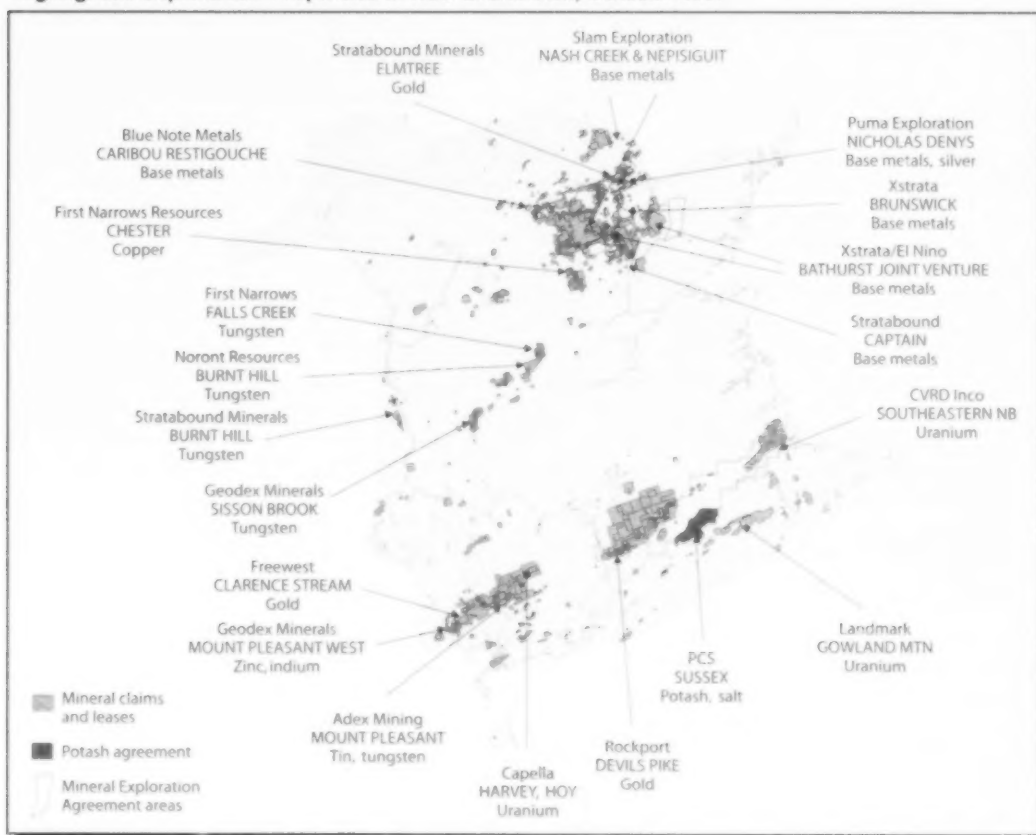
⁹ The New Brunswick review of activities was compiled by Leslie R. Fyffe and Don J.J. Carroll. For more information, the reader is invited to contact Mr. Fyffe by telephone at 506-453-3874 or by e-mail at Les.Fyffe@gnb.ca.

Figure 15
Claims in Effect in New Brunswick, 1992-2007



Source: New Brunswick Department of Natural Resources.

Figure 16
Highlighted Exploration Properties in New Brunswick, October 2007



Source: New Brunswick Department of Natural Resources

7.0 m at a vertical depth of 210 m in hole CS07-264, and 3.59 g/t over 7.0 m at a vertical depth of 208 m in hole CS07-265. Rockport Mining Corp. signed a deal with Freewest in late 2007 to spend \$7.5 million on the Clarence Stream property over the next four years.

Stratabound Minerals Corp. reported gold assays from 23 holes drilled in 2006 on its Elmtree property in northern New Brunswick, including 2.53 g/t over 11.0 m in DH06-25, 1.02 g/t over 21 m in DH06-30, 2.52 g/t over 6.5 m in DH06-28, 0.5 g/t over 15.5 m in DH06-33, and 0.5 g/t over 64.0 m in DH06-41.

Rockport Mining Corp. has opened up several new trenches on its Devil Pike Brook property in southern New Brunswick. Gold values of up to 18.7 g/t over 4.35 m have previously been reported in quartz veins on the property.

Polymetallic Minerals

Geodex Minerals Ltd. reported the following inferred resources for zone III of the Sisson Brook tungsten-molybdenum deposit: 290.8 Mt of 0.118% WO_3 equivalent based on a cut-off grade of 0.025%, 215.0 Mt of 0.140% WO_3 equivalent based on a cut-off grade of 0.075%, 109.0 Mt of 0.179% WO_3 equivalent based on a cut-off grade of 0.125%, 43.4 Mt of 0.227% WO_3 equivalent based on a cut-off grade of 0.175%, and 15.8 Mt of 0.281% WO_3 equivalent based on a cut-off grade of 0.225% (WO_3 equivalent = $\text{WO}_3\% + [\text{Mo}\% \times 2.97]$).

Noront Resources Ltd. and Cadillac Ventures Inc. are undertaking a \$1.5 million exploration program on the Burnt Hill tungsten deposit located in central New Brunswick. The joint venture will include drilling to provide sufficient information to confirm previous data contained in the technical report and allow for the preparation of an NI 43-101-compliant resource estimate.

Base Metals

SLAM Exploration Ltd. reported that its Nash Creek deposit in northern New Brunswick contains a total indicated resource estimated at 3.24 Mt grading 4.67% zinc, 0.80% lead, and 27.8 g/t silver, with an additional inferred resource of 2.69 Mt grading 3.65% zinc, 0.77% lead, and 20.0 g/t silver. Drilling is continuing on the newly discovered mineralized sulphide breccia zone extending northward from the Nash Creek deposit.

SLAM also drilled 12 holes into its Nepisiguit base-metal deposit in the Bathurst mining camp in 2007. Assays from Zone A include 7.74% zinc, 2.88% lead, 0.10% copper, and 31.4 g/t silver over 6.0 m in hole NP07-6; and from Zone B include 0.41% lead, 0.07% copper, and 14.8 g/t silver over 17.45 m in hole NP07-9.

Puma Exploration drilled 20 holes in the Haché deposit on its Nicholas Denys property in northern New Brunswick in 2007. The four drill holes with the best silver assays ran 461 g/t over 6.0 m, 331 g/t over 3.05 m, 244 g/t over 4.6 m, and 262 g/t over 4.2 m. A metallurgical test on a composite 30-kg sample from the Haché deposit recovered 84% of the zinc, 90% of the lead, 84% of the silver, and 68% of the gold.

First Narrows Resources Corp. completed a delineation drilling program on the Chester base-metal deposit in the Bathurst mining camp that will form the basis for a mineral resource estimation compliant with National Instrument 43-101. Drilling at Chester began in November 2006 and consists of 168 resource definition drill holes and 10 metallurgical holes for a total of 14 048 m. An underground exploration program has begun with the re-opening of the decline constructed in 1975.

Cornerstone Capital Resources Inc. and Phelps Dodge Corporation of Canada, Ltd., a subsidiary of Freeport-McMoRan Copper & Gold Inc., have formed a joint venture to explore for sediment-hosted, stratiform copper deposits in the Maritimes Basin of southeastern New Brunswick. Work will consist of mapping and prospecting focused on defining drill targets along the Dorchester mine horizon and at the Goshen prospect. The Dorchester deposit contains an historic resource of 6 Mt of low-grade copper, including zones of 2-10% copper. The Goshen copper prospect is reported to host 25 000 t of 2.25% copper.

Xstrata Zinc Canada and its junior mining partner El Niño Ventures Inc. are continuing to explore for base-metal deposits in the Bathurst mining camp under an Advanced Exploration Agreement with the Province of New Brunswick. Nearly 150 holes have been drilled over the past five years to investigate anomalies outlined by airborne and ground geophysical surveys.

Stratabound Minerals Corp. was awarded a \$100 000 grant from the Province of New Brunswick's new Deposit Evaluation Program to upgrade reserve estimates on its Captain copper-gold property in the Bathurst mining camp. Twelve holes have been drilled to date. Hole CP07-1 intersected a 7.5-m interval of 3.18% copper and 0.44 g/t gold with an average grade for the entire 52-m interval of 1.12% copper and 0.24 g/t gold.

Uranium

Capella Resources Ltd. has completed an airborne magnetic and radiometric survey over four of its uranium properties in southern New Brunswick. Follow-up drilling in the Harvey volcanic complex intersected 1.5 m of 0.094% U_3O_8 in hole HL-004 and 1.4 m of 0.092% U_3O_8 in hole HL-008.

CVRD Inco Ltd. has entered into a five-year agreement with the Province of New Brunswick that gives it exclusive rights to search for uranium in a 136 000-ha area extending along the southern margin of the Maritimes Basin between Sussex and Moncton. CVRD has completed extensive geochemical surveys and delineated drill targets on some of its properties.

Provincial Exploration Initiatives

The Minerals, Policy and Planning Division of the Department of Natural Resources has offered four programs to stimulate exploration activity: the New Brunswick Prospector Assistance Program (NBPAP), the New Brunswick Junior Mining Assistance Program (NBJMAP), the New Brunswick Deposit Evaluation Program (NBDEP), and the Advanced Exploration Program in the Bathurst mining camp. The NBPAP, NBJMAP, and NBDEP have a total annual budget of \$1 000 000. The Advanced Exploration Program was introduced in 2003 to stimulate exploration for deeply buried base metals in the Bathurst mining camp. It has a budget of \$2 500 000 per year over a period of five years.

New Brunswick Prospector Assistance Program (NBPAP)

This program was developed to encourage grassroots exploration in New Brunswick. In 2007, 40 prospectors received grants worth a total of \$250 000. A budget of \$50 000 is used to fund prospecting courses and travel expenses for prospectors to attend the Prospectors and Developers Association of Canada (PDAC) conference in Toronto and the Mineral Exploration Roundup in Vancouver.

New Brunswick Junior Mining Assistance Program (NBJMAP)

This program was developed as part of New Brunswick's efforts to attract exploration investment into the province. In 2007, 12 junior mining companies received grants totaling \$450 000.

Advanced Exploration Program

The Province of New Brunswick and Xstrata Zinc are into the fourth year of a cost-shared Advanced Exploration Program in the Bathurst mining camp. The objective of this program is to identify new base-metal reserves prior to the expected closure of the Brunswick mine in a few more years. New Brunswick is contributing 50% of the funding up to a maximum of \$2 500 000 per year. The application of advanced exploration technology under this agreement allows the identification of potential mineralization at much greater depth than was previously possible.

Mining Highlights

The value of mineral production from the base-metal mine near Bathurst, the potash mine near Sussex, and various peat and quarry operations across New Brunswick totaled \$1.485 billion in 2006, up from \$907 million in 2005. Metals accounted for 80% of New Brunswick's mineral production in 2006. The next largest contributor was potash, which represented about 15% of the total.

Mine Development

Blue Note Mining Inc. has refurbished the Caribou underground mine and mill and the Restigouche open-pit mine in the Bathurst mining camp at a cost of \$84 million. The first shipments of lead concentrate from Blue Note Mining have been delivered to the Xstrata smelter in Belledune. Blue Note Mining has also developed a three-year exploration plan geared toward regional exploration in the Bathurst mining camp that includes a comprehensive geophysical survey over the Caribou and Restigouche properties and the nearby Armstrong, McMaster and Orvan Brook properties.

Potash Corporation of Saskatchewan Inc. announced plans for a new 2-Mt/y potash mine in Sussex. The construction project will cost US\$1.6 billion, take four years to complete, generate the equivalent of 2500 person-years of employment, and create 140 new full-time positions.

Adex Mining Inc. plans a minimum of 5000 m of drilling within the Fire Tower, North, and Deep Tin zones on its Mount Pleasant mine property in southwestern New Brunswick. The drilling program will be carried out in conjunction with the general reactivation and upgrading of the infrastructure at the mine property, including the undertaking of bench-scale metallurgical test work to develop preliminary flow sheets. The preliminary budget for the project is estimated to be \$1.5 million. The Fire Tower zone contains an NI 43-101-compliant inferred resource of 13.1 Mt at 0.35% WO_3 and 0.21% MoS_2 . The North and Deep Tin zones contain an NI 43-101 non-compliant historical total resource of 3.65 Mt of 0.80% tin, 107 g/t indium, 0.87% zinc, and 0.19% copper.

Outlook

In 2008, New Brunswick should see exploration activity that is on par with 2007 levels. Mineral production will increase with production from the Caribou and Restigouche mines.



2.5 QUÉBEC¹⁰

A Destination of Choice for Mineral Exploration

For several years, Québec's investment climate for mineral exploration has been very favourable. As of December 31, 2007, there were over 263 000 active mining titles in Québec, representing 12 Mha and hitting a record high. Moreover, exploration and deposit appraisal expenditures in Québec broke the \$200 million mark in each of the last four years (\$227 million in 2004, \$205 million in 2005, \$295 million in 2006, and \$365 million in 2007, based on company spending intentions).

In 2006, most of these expenditures were allocated to off-mine-site work (\$265 million, 82%), managed primarily by junior companies (\$187 million) and senior companies (\$73.5 million). Exploration and deposit appraisal activities focused mainly on precious metals, primarily gold (\$145.4 million, 49.3%), base metals (\$70.8 million, 24%), diamonds (\$29 million, 9.8%), ferrous metals (\$22.2 million, 7.5%), and uranium (\$22 million, 7.4%).

Exploration and Deposit Appraisal Highlights

Owing to high prices for metals (gold, copper, nickel, zinc, and iron), uranium prices, and recent significant discoveries of various commodities in Québec, exploration activity was intense in the Abitibi region and in the southern part of northern Québec (gold, copper and zinc), in the James Bay area (gold, diamonds, zinc, and copper), on the North Shore (iron), and in the Ungava Peninsula (nickel, copper, and platinum group elements). There has been intense uranium exploration in a new area: eastern Nunavik, east and south of Ungava Bay.

Gold

West of Rouyn-Noranda, Rocmec Mining Corporation Inc. continued drift excavation and underground drilling on its Rocmec I project (formerly Russian-Kid). In the Boucher vein, hole RS-02-07 intersected 214 g/t gold over 2.4 m. Yorbeau Resources Inc. completed drilling on the Augmitto block on its Rouyn property and hole 07-S-425 intersected 20.78 g/t gold over 3 m. Preparations to dewater a ramp on this deposit are under way. In the same sector, Alexis Minerals Corporation and Thundermin Resources Inc. completed a 36-hole drilling program on the Lac Pelletier project. Best results include 7.58 g/t gold over 22.4 m at the intersection of the B shear and Zone 4.1, intersected in hole 17475-31.

Aurizon Mines Ltd. completed a drilling campaign on its Joanna property 20 km west of Rouyn-Noranda. Hole JA-01 intersected 32 m grading 2.2 g/t gold. A new valuation of the deposit's tonnage and grade shows indicated resources of 11.3 Mt grading 1.7 g/t gold and inferred resources of 28.57 Mt grading 1.6 g/t gold.

IAMGOLD Corporation continued driving an exploration drift eastward from level 14 of the Doyon mine toward the gold mineralization discovered at the Westwood project. Exploration drilling completed beneath that drift identified a new mineralized area 1000-1500 m east of the Doyon mine between 900 and 2000 m below the surface, the Zone 2-Extension. A preliminary feasibility study is under way and should be completed in the second half of 2008.

¹⁰ The Québec review of mineral exploration activities was prepared by Serge Perreault (co-ordinator), Pierre Doucet, James Moorhead, Patrick Houle, Suzie Nantel, N'Golo Togola, Yves Bellemare, Jocelyne Lamothe, Martin Dumas, Denis Blackburn, and Roch Gaudreau. Exploration highlights were taken from the *Report on Mineral Exploration Activities in Québec 2007*. For more information, the reader is invited to contact Serge Perreault by telephone at 819-354-4514, ext. 244, or by e-mail at serge.perreault@mmf.gouv.qc.ca.

In the Cadillac sector, Agnico-Eagle Mines Ltd. continued developing the LaRonde Extension deposit, which is the extension of the 20 North zone deep beneath the existing LaRonde mine infrastructure. The company is currently sinking an internal shaft near the existing Penna shaft. The mine is expected to begin production at a processing rate of 6000 t/d in 2011, and probable reserves of approximately 3.6 million oz of gold will sustain production for 10 years. The deposit also contains reserves of 13 million oz of silver, 62 000 t of copper, and 155 000 t of zinc.

Agnico-Eagle Mines Ltd. continued development work on the Lapa gold deposit located 11 km east of the LaRonde mine. The company is planning more deep drilling directly beneath the bottom of the Lapa shaft to a depth of 1350 m.

In the Val-d'Or area, Agnico-Eagle Mines Ltd. continued construction of surface buildings, sinking of the production shaft, and underground development at the Goldex mine project, which has reserves of 21.77 Mt grading 2.4 g/t gold. Production is expected to begin in 2008 at a rate of 170 000 oz of gold per year.

Alexis Minerals Corporation produced 3980.4 troy oz of a gold-silver mix (80/20) from a 50 000-t bulk sample on the Lac Herbin property, 10 km northeast of Val-d'Or. Underground exploration and definition drilling continued, totaling 26 700 m. The results were extremely encouraging and an update of the inferred resources should be conducted in early 2008.

Osisko Exploration Ltd. continued exploration on its Canadian Malartic property, with 150 000 m of definition drilling and 20 000 of exploration drilling. In July 2007, inferred resources totaled 286 Mt grading 0.92 g/t gold using a cut-off grade of 0.4 g/t for a potential 8.4 million oz of gold. The feasibility study and environmental impact study were initiated for a 40 000-t/d open-pit operation.

Near Malartic, Niogold Mining Corporation estimated indicated resources at 845 000 t grading 2.66 g/t gold and 3.09 Mt grading 2.72 g/t gold for the Nolartic and Kierens deposits. Drilling intersected several gold-bearing areas, including 6.5 g/t gold over 3 m for hole MB-07-013, near the Marban deposit.

Alexandria Minerals Corporation continued exploration on its Cadillac Break properties, and on the Orenada property; drilling intersected large areas of low-grade mineralization, such as 0.94 g/t gold over 79 m (true thickness) at hole AAX-07-11.

On the Casa Berardi property, Aurizon Mines Ltd. intersected several areas of gold mineralization in the 113, 118-120, and Principal zones.

East of Lebel-sur-Quévillon, Metanor Resources Inc. is extracting a bulk sample on the Barry gold deposit where indicated resources of 385 000 t grading 4.23 g/t gold, near the surface, were established. On the Lac Windfall property, drilling by Noront Resources Ltd. intersected a gold-bearing PY-QZ stockwork in altered felsic volcanic rocks. Several intersections are high grade, such as 19.37 g/t gold over 4.0 m for hole NOT-07-157. Construction of an exploration ramp is slated for 2008.

Thirty-five kilometres northwest of Lebel-sur-Quévillon, Cadiscor Resources Inc. is developing the Discovery gold-bearing deposit, and mineral resources in this deposit stand at close to 2.1 Mt grading 5.77 g/t gold. From October 2006 to March 2007, the company drilled 26 300 m in this deposit, which should be put into production in 2011.

The James Bay area continued to generate strong interest in gold, mainly in the Eastmain River corridor. Goldcorp Inc. continued definition drilling of the Roberto gold mineralization system on the Éléonore property northeast of the Opinaca Reservoir in order to test the potential of the deposit and obtain additional data for preliminary technical and economic studies. The Roberto system has

now been defined over a lateral distance of 1.9 km and to a depth of 900 m, and is still open in all directions. Indicated mineral resources, published in the first quarter of 2007, total approximately 11.7 Mt grading 7.3 g/t gold. Development work should accelerate during 2008. The recent discovery of a high-grade shear zone (hole ELE-07-470, 267.51 g/t gold over 1.45 m) in the Roberto north extension should contribute substantially to future resource estimates.

South of the Éléonore project, the joint venture of Les Mines Opinaca ltée, Azimut Exploration Inc., and Eastmain Resources Inc. confirmed the JT gold target area at the Éléonore South JV project with the discovery of the VG zone assaying 37.8 g/t gold over 1.0 m, 31.2 g/t gold over 1.0 m, and 5.33 g/t gold over 8.0 m (channel sampling) in sedimentary rock comparable to the Roberto deposit.

On the Opinaca B property a few kilometres northeast of the Éléonore project, partners Everton Resources Inc. and Azimuth Exploration Inc. reported several gold-bearing intersections in drilling on the Claude target, including hole OP-07-11, which yielded 6.73 g/t gold over 2.0 m.

In the Chaudière-Appalaches area, drilling by Golden Hope Mines Limited on the Timmins 2 zone of the Bellechasse property intersected 7.51 g/t gold over 6.45 m, including 34.8 g/t gold over 1.09 m and 1.85 g/t gold over 18.78 m, which included 4.07 g/t gold over 5.02 m. The results of the analyses of 68 samples collected from trenches across the Ascot Vein yielded assays ranging from 0 to 34 g/t gold, based on the sample and a weighted average gold ranging from the mineralized background (150 parts per billion) to 4.38 g/t gold.

Base Metals

In November 2007, First Metals Inc. began producing at the Fabie mine northwest of Rouyn-Noranda. The deposit has reserves of 670 000 t grading 2.77% copper and should be in production for two years. A bit farther west, resources at the Magusi River deposit are estimated at 2 Mt grading 4.38% zinc, 1.06% copper, 1.22 g/t gold, and 33 g/t silver.

In the Lebel-sur-Quévillon region, the Langlois mine, owned by Breakwater Resources, reached commercial production during the summer of 2007. The measured and indicated reserves and resources at the Langlois mine are estimated at 5 Mt grading 11.1% zinc, 0.8% copper, 54 g/t silver, and 0.1 g/t gold.

In the Chibougamau region, Cogitore Resources Inc. conducted a major drilling program on its Scott Lake project to extend three known copper-zinc zones and a copper-zinc lens discovered in 2006.

MSV Resources Inc. and Nuinsco Resources Ltd. commenced development on the Corner Bay property 55 km south of Chibougamau. Mineral resources in this deposit total 1.9 Mt grading 6.5% copper. Production is expected to begin in 2009.

Xstrata continued developing the Perseverance project in Matagami with a view to starting production in November 2008. Altogether, the lenses of the Perseverance project contain measured and indicated resources of 5.1 Mt grading 15.8% zinc, 1.24 % copper, 29 g/t silver, and 0.38 g/t gold.

Sirios Resources Inc. announced the results of drilling on its Pontax property, showing a substantial silver-zinc-copper-gold-lead mineralization zone extending several kilometres along a favourable felsic horizon. Exposed on surface over a 50-m length and intersected by drill holes over a strike length of 200 m, the mineralized zone reaches a minimum vertical depth of 100 m, and its width varies between 1 m and 10 m, averaging 3.2 m. The weighted average metal grades in this zone, which remains open at depth, are 94 g/t silver, 0.59% zinc, 0.18% copper, 0.22 g/t gold, and 0.11% lead.

About 50 km west of the former Eastmain gold mine, northwest of the Otish Mountains, Western Troy Capital Resources Inc. published a new resource estimate for the MacLeod Lake project:

indicated resources of 24.4 Mt grading 0.53% copper, 0.076% molybdenum, 0.05 g/t gold and 4.0 g/t silver, and inferred resources of 3.8 Mt grading 0.29% copper, 0.036% molybdenum, 0.03 g/t gold and 3.0 g/t silver for the Main zone, as well as indicated resources of 1.47 Mt grading 0.72% copper, 0.18% molybdenum, 0.54 g/t gold and 19 g/t silver for the South zone. In 2007, based on these results, the company initiated a scoping study for the project.

On the Coulon JV property, 15 km north-northwest of the Fontanges airport in the Caniapiscau region, Virginia Mines Inc. drill tested six massive sulphide lenses (9-25, 16-17, 08, 43, 44, and Spirit). The best intersections to date are 9.94% zinc, 0.73% copper and 96.4 g/t silver over 19.5 m for lens 16-17, and 4.34% zinc, 1.12% copper and 33.79 g/t silver over 30.85 m for lens 44.

In Gaspésie, Threegold Resources Inc. announced, in early 2007, an average of 3.06% copper and 5.17 g/t silver in one of 12 trenches sampled in 2006 on the Gasse property of the Lemieux Dome project. This average was calculated from 32 grab samples collected over a 27-m section. Six other grab samples from another sector of the Gasse property taken over 21 m of trench graded, on average, 1.16% copper, 3.39% zinc, and 6.18 g/t silver.

On its Lac des Pics property, First Source Resources Inc. intersected over 3 g/t gold in 11 of 23 samples selected in the Vein 1 zone. Five trench samples collected in the northern section of this vein graded 0.2-1.1 g/t gold. Of the 27 samples selected in the Vein E zone, nine graded from 1.12% to 5.86% copper.

Nickel (Copper and Platinum Group Elements)

Some 140 km northeast of Matagami, Victory Nickel Inc. completed an appraisal of mineral resources in its Lac Rocher project, with measured and indicated resources totaling 1.2 Mt grading 0.93% nickel. The company is planning an initial project development phase during 2008, with bulk sampling of 50 000 t of material grading 4% nickel using a ramp.

For the Lac Levac project 40 km northeast of Nemiscau, Golden Goose Resources announced indicated resources of 516 000 t grading 0.89% nickel, 0.39% copper, 0.058% cobalt, 0.14 g/t platinum, and 0.79 g/t palladium, and inferred resources of 734 000 t grading 0.89% nickel, 0.39% copper, 0.06% cobalt, 0.14 g/t platinum, and 0.77 g/t palladium, to a depth of 210 m.

The Ungava Belt continued to be the main area of interest for nickel. Canadian Royalties Inc. extended westward and increased the depth of the Ivakkak deposit, which in 2005 initially contained estimated indicated resources of 520 000 t grading 1.6% nickel, 2.1% copper, and 4.4 g/t platinum group elements (PGE). In June 2007, Canadian Royalties published highlights of a feasibility study on the Nunavik nickel project, which is based on mineral resources of 11.3 Mt grading 0.97% nickel, 1.13% copper, and 2.31 g/t PGE. Operations are scheduled to commence in 2010. Also, a preliminary economic assessment estimates indicated resources for the Mequillon deposit at 5.4 Mt grading 0.74% nickel, 1.07% copper, 0.04% cobalt, 0.23 g/t gold, 0.70 g/t platinum, and 2.65 g/t palladium in the same project.

Exploration results from Xstrata Nickel's latest drilling program on the Raglan property have added inferred resources of approximately 2 Mt grading 3.0% nickel in zone 5-8, located 4 km east of Katinniq (Raglan mine), including a 63-m intersection grading 4.4% nickel and 1.6% copper. Zone 5-8 has now replaced Katinniq as Raglan's largest mineralized zone with a preliminary estimate putting inferred resources at 10 Mt grading 3.2% nickel, 0.8% copper, 0.08% cobalt, 0.9 g/t platinum, and 2.1 g/t palladium. Plans are under way to raise production at the Raglan mine from 1.1 to 1.3 Mt/y of ore by the end of 2008.

Anglo American Exploration (Canada) Ltd. and Knight Resources Inc. continued exploring the West Raglan property, which covers approximately 65 km of the Raglan horizon. Several mineral-bearing intersections were reported, i.e., 3.22% nickel, 1.93% copper, 0.99 g/t platinum, and 3.35 g/t

palladium over 3.50 m (hole WR-07-130), and 1.06% nickel, 0.36% copper, 0.24 g/t platinum, and 0.96 g/t palladium over 25.79 m (hole WR-07-128) in the Frontier South zone, as well as 0.5% nickel, 0.27% copper, 0.14 g/t platinum, and 0.5 g/t palladium over 9.16 m (hole WR-07-132) in the Century zone.

About 80 km southeast of the Raglan mine, Goldbrook Ventures Inc. continued exploring the Bélanger-Delta horizon on its Raglan property, reporting on several drill intersections, including 1.79% nickel, 3.49% copper, 0.09% cobalt, 0.40 g/t platinum, 2.96 g/t palladium, and 0.18 g/t gold over 7.0 m (hole BRA07-006, Bravo area); 1.41% nickel, 0.67% copper and 3.23 g/t PGE and gold over 96.4 m (hole SYL07-023, Sylvie area); and 0.54% nickel, 0.67% copper, 0.03% cobalt, and 1.47 PGE and gold over 42.0 m (hole MYS07-002, Mystery area).

In the Témiscamingue region in the Pontiac Subprovince, Fieldex Exploration Inc. (LaForce project) intersected 30.09 m grading 1.00% nickel and 0.53% copper in hole LF-07-07.

In the northeast Grenville Province, Manicougan Minerals Inc. disclosed the results of initial drilling in its Mouchalagane project. Hole MCH-07-03, on the Bob Showing, intersected 9.49% nickel, 0.07% copper, 0.45% cobalt, 1.17 g/t platinum, and 7.88 g/t palladium over a 0.16-m section.

Diamonds

In January 2007, Stornoway Diamond Corporation (SDC) acquired all the shares of Ashton Mining of Canada Inc. (Ashton). Ashton and SOQUEM INC. own the Foxtrot diamond-bearing property north of the Otish Mountains. In February 2007, the joint venture completed a bulk sample of 10 000 t of kimberlite-bearing material in surface trenches at Renard 4 and underground sampling via a ramp at Renard 2 and 3, and recovered a total of 6497 ct from 6036 t of kimberlite processed from the bulk sample. The average grade is 1.08 ct/t. According to a diamond valuation by WWW International Diamond Consultant, the modelled base case diamond price estimate for the Renard 2 and 3 parcels was US\$109/ct, compared with US\$63/ct for the Renard 4 sample. The results of the 530-t bulk sample from Lynx show a content of 1.07 ct/t, including a 21.53-ct stone. A preliminary feasibility study of the project is under way and results should be known in 2008.

Uranium

In the sedimentary basin of the Otish Mountains, Strateco Resources Inc. continued definition drilling in the core of the AM-15 zone in its Matoush uranium project over a horizontal distance of more than 160 m grading 1.0% U_3O_8 . This work helped establish indicated mineral resources totaling 201 000 t grading 0.79% U_3O_8 and containing 3.48 million lb of U_3O_8 . These values are part of the Matoush Fault Zone (MFZ), which was drilled over a distance of at least 9 km.

NWT Uranium Corporation and Azimut Exploration Inc. exposed seven separate uranium mineralization zones over a cumulative length of 10 km, with values up to 3.3% U_3O_8 in selected samples from the North Rae property in the Ungava Bay region. In the same region, Majescor Resources Inc. and Azimut Exploration Inc. outlined a prospective 30-km-long uranium mineralization corridor on the South Rae property with grades of up to 0.57% U_3O_8 obtained from grab sample assays.

On the North Shore, Jourdan Resources Inc. reported good results from surface sampling on its uranium property in the Wakeham sedimentary basin, 70 km north of Havre-Saint-Pierre. Sample no. 436254 graded 0.591% U_3O_8 . Drilling is under way in the four deposits discovered on this property.

Iron

In September 2007, New Millenium published highlights from a preliminary assessment of the KéMag iron ore property 50 km northwest of Schefferville. The project is based on mineral resources of 2.3 billion t at 30.9% iron in magnetite taconite. Several studies still have to be completed before a decision is made on the project.

On the North Shore, in the spring of 2007, Consolidated Thompson Iron Mines published highlights from its feasibility study. The company is planning to invest US\$333 million to develop the Bloom Lake mine and produce 7 Mt of concentrate grading 66% iron. It hopes to have this deposit producing in 2009. In the Peppler Lake region, Quinto Mining Corporation continued exploring satellite iron properties at the Peppler Lake deposit (250 Mt grading 28.2% iron). Recent drilling on the Lamallée property intersected 35.02% iron over 111 m (hole L-9-07), 30.69% iron over 114 m (hole L-3-07) and 29.68% iron over 279 m (hole L-5-07).

Industrial Minerals

Exploration Orbite VSPA inc. drilled numerous holes in the Grande-Vallée red clay deposit northeast of Murdochville (Gaspésie) to better define the deposit's reserves. The company is also planning a pilot project in 2008 to extract high-purity alumina from the red clay.

Architectural Stone

During the year, Rocamat SA, a publicly traded company (Euronext, Paris Stock Exchange) that operates 30 limestone quarries and 10 natural stone processing plants in France, finalized its acquisition of all capital shares of Polycor inc, creating a platform of over 1100 employees with sales of \$200 million. Each company will be managed independently.

Comparative Advantages and Recent Provincial Initiatives

Québec has one of the most favourable mineral exploration investment climates in the world. According to the results of the Fraser Institute's annual surveys of the mining industry in the past five years, Québec ranked first in Canada and placed in the top five in the world in terms of mineral exploration investment climate, which is determined by mineral potential and government policy.

A Rich and Diverse Mineral Potential in a Vast, Open, Little-Explored Territory

Because of the richness of its subsoil, Québec ranks second in Canada in terms of mineral production value. Its mineral wealth is particularly diverse, as illustrated by the production of some 30 mineral commodities in the province. Québec also ranks as a significant producer of iron, nickel, gold, copper, zinc, niobium, ilmenite, and titanium dioxide. Discovery prospects are extremely attractive, as illustrated by the development of numerous major deposits in the past 100 years, including the Raglan and LaRonde deposits in the last decade, and the presence of many ongoing mine development and advanced exploration projects.

Québec has a land area of over 1.67 million km². Over 90% of Québec consists of Precambrian rock, which is known worldwide for hosting many world-class deposits. Even after the recent wave of claim staking for diamonds, nickel, gold, and uranium, the more than 12 Mha covered by claims represents only 7.2% of Québec's landmass. In December 2007, a total of 17.8 Mha, or 10.7% of the province's landmass, was closed to exploration.

Abundant and Accessible Geoscientific Information

In Québec, the geoscientific data acquired by government and industry for over 100 years are found in SIGEOM, the province's geomining information system. It contains no fewer than 5284 Québec Ministry of Natural Resources and Wildlife (MRNF) publications and 65 500 reports produced by mining companies, for a total of 2.6 million pages, 336 000 geological plans and maps, 7135 mineral occurrences (metallic and nonmetallic), 132 081 diamond drill holes, and 14.9 million geochemical analysis results obtained from 638 000 samples. The information in this database is valued at over \$3 billion and it is constantly being updated and improved. It bears noting that over 90% of the pages and plans in the database are digitized and can be viewed free of charge on the Internet.

This information can be easily accessed, particularly with the *SIGÉOM à la carte* interface (www.mrnf.gouv.qc.ca/mines/index.jsp). SIGÉOM allows all of its mining clients to access and consult the data on the Internet from anywhere at any time, and to download, customize and order them through e-commerce.

Geoscientific Knowledge Acquisition and Processing

The amount of work conducted by MRNF to acquire new geoscience knowledge should remain significant over the coming years. In the 2007-2008 Budget Speech presented on May 24, 2007, the Québec government provided Géologie Québec with additional funding of \$21 million over the next three fiscal years, amounting to \$7 million each for 2007-2008, 2008-2009 and 2009-2010. The funds will be used to target strategic geographical sectors for exploration work and to promote the mineral potential of the various regions of Québec. Most of the work in 2007 was a continuation of projects begun in 2006 and reflects the priorities already identified by the Copper Plan in northwestern Québec and the three-year plans in the various geological regions of Québec.

COPPER PLAN

For the second year in a row, northwestern Québec was the scene of an extensive geoscience program to promote the exploration and discovery of new deposits that could supply copper concentrate for the Horne smelter in Rouyn-Noranda. Carried out in partnership with the Ontario Geological Survey (OGS), the Geological Survey of Canada (GSC), and other industrial, academic and regional players, this geoscience work is also intended to network all available human resources.

The Rouyn-Noranda sector is highly prospective for the discovery of copper deposits and will be the target of several multi-disciplinary projects, including new inventories in the western part of the Blake River Group. The work will be carried out on both sides of the Québec-Ontario border by MRNF and OGS geologists. Metallogenic studies will have been conducted along the Cadillac Fault and in the Malartic Group to test the possible extension into Québec of the units hosting the giant Kidd Creek deposit near Timmins, Ontario. Three-dimensional modeling along the Cadillac Fault and in the Blake River Group to identify mineral potential at depth, as well as several other thematic studies (geochronology, structural geology, ore deposit study, etc.), was carried out to supplement previous work.

During the winter of 2007, MRNF and the GSC began the first phase of the Rivière Octave overburden and bedrock drilling project. Located between Amos and Lebel-sur-Quévillon, this project will provide a better understanding of the geology of a highly prospective sector that contains the Sleeping Giant and Langlois deposits. However, this sector is little-known and under-explored because of significant Quaternary sedimentary accumulations and a lack of outcrop.

In the Chibougamau area, summer fieldwork resulted in updates of several geological maps in this highly prospective area for copper, which was the subject of a recent airborne geophysical MEGATEM survey by the GSC, as part of the TGI 3 Targeted Geoscience Initiative. The work will be complemented by 3D modeling of the south limb of the Lac Doré Complex.

In the James Bay region, Géologie Québec continued geological mapping (scale 1:50 000) in the Opinaca area. The area mapped in 2007 is located west of the Opinaca reservoir and north of the Eastmain River. The work done over the last two years indicates promising potential for porphyry-type occurrences, gold-rich volcanogenic massive sulphides, gold associated with deformation zones or contact zones between sedimentary and volcanic sequences, epigenetic occurrences associated with metasomatic vein networks, iron formation-hosted occurrences, and rare elements in white pegmatites.

FAR NORTH

Geological mapping at a scale of 1:250 000 will be carried out on the Rivière Sérigny (23N) map sheet. In addition, the survey will cover the western third of the Lac Cambrien (24C) map sheet immediately to the north. This survey will complete the mapping already carried out during the Far North program in Nunavik between 1998 and 2004.

GRENVILLE PROVINCE AND THE APPALACHIANS

Several projects were carried out in the Grenville Province on the north bank of the St. Lawrence River in 2008. Geological mapping at a scale of 1:125 000 was carried out in the Côte-Nord Region, west of Baie-Comeau. A pilot project to evaluate the potential for all mineral resources (metals, stone, aggregate, peat, etc.) was conducted in the Saguenay–Lac-Saint-Jean region.

The potential for dimension stone in the Grenville Province and the Appalachians was evaluated in central and eastern Québec (Portneuf, Charlevoix, and Bas-Saint-Laurent).

QUATERNARY GEOLOGY

A compilation of unconsolidated deposits and erosion marks will also cover large areas of the North Shore, Lower St. Lawrence, and Québec City regions.

GEOCHEMISTRY AND GEOPHYSICS

A regional lake-bottom sediment survey was completed in the fall of 2007. The 21 500-km² survey covers the area west and north of Sept-Îles in the North Shore Region. The goal of this survey is to identify new exploration targets that are likely to promote mineral exploration in this area of the Grenville Province.

During the fall, MRNF conducted a high-resolution ground gravity survey over the area west of the Blake River Group in Abitibi, while the GSC carried out a similar survey in the eastern part of the same geological unit. After consultation with the mining industry, it was decided to expand the survey's coverage to include the entire Blake River Group, thereby responding to the regional priority issue targeted by the Copper Plan and the TGI 3 Targeted Geoscience Initiative. The coverage of the new joint MRNF/GSC gravity survey should provide a clearer picture (three-dimensional) of the volcanic and plutonic architecture of the Blake River Group and outline new exploration sectors in Québec's most prolific copper mining camp, the Rouyn-Noranda mining camp.

A Reliable, Modern Mining Regime

The Québec mining regime is based on the *Mining Act* and is founded on the principle of free mining, i.e., universal access to the resource. Mining titles are now being obtained from map designations, according to predefined boundaries. Titles, together with exclusive rights to search for all state-owned mineral commodities (with the exception of sand, gravel, clay, and other surface deposits, oil, natural gas, and brine) and a guarantee to receive a mining title in the case of a discovery, are awarded on a first-come, first-served basis. This approach has the advantage of being fast and simple; it also makes the claim indisputable by a third party and protects investments in the claim.

The average cost of acquiring a new designated claim of an average area of 50 ha is \$80. This is a real financial boon to explorationists since the previous cost of staking out and registering a similar area was over \$500. Consequently, the acquisition of claims in Québec via map designation is, on average, close to seven times less expensive for the industry compared to the old method of ground staking.

The electronic public register of real and immoveable mining rights in Québec is reliable and powerful, and can be accessed from the GESTIM Plus web interface (<https://gestim.mines.gouv.qc.ca>). This secure site offers a variety of web-based informational, transactional, and interactive services allowing users to manage mining titles at any time. GESTIM Plus provides direct instant access to the register's public data, and search tools can be used to submit complex queries and download the results. Users can consult data and download maps of mining titles free of charge, monitor notices of map designations in real time, check land availability, submit designation notices, and then pay fees via the Department's e-commerce system. GESTIM Plus members can also apply to renew their claim designations, consult previous transactions, check progress on their current applications, and save them in the registry and update them securely, as well as manage their exploration mining titles independently.

One of the Lowest Net Exploration Costs in the World

Québec offers several tax incentives that significantly reduce the net cost of exploration for mining companies in Québec and promote the financing of their activities (www.mrmf.gouv.qc.ca/mines/fiscalite/index.jsp).

Under the *Taxation Act*, the Québec government introduced the tax credit for resources (CIRR) in 2001. This mechanism provides direct assistance to mining companies that incur eligible exploration expenses in Québec, unlike the flow-through-share regime in which companies give up the right to deduct eligible expenses to an investor. Part of this tax credit is refundable and part is non-refundable (ending on December 31, 2007).

With respect to the refundable portion, eligible exploration costs incurred after March 30, 2004, may give rise to an entitlement of 35% of the costs incurred by companies that are not mining a mineral resource, or 15% of the costs incurred by companies engaged in mining activities. These rates are higher (38.75% and 18.75%, respectively) for costs incurred in Québec's Near North or Far North.

In addition to the refundable portion, a non-refundable portion can be applied, where applicable, to reduce the income tax and capital tax that a company must pay in Québec. The rate for the non-refundable portion can amount to a maximum of 10% of the eligible costs incurred by companies that are not producing (a mineral resource) and 30% of the costs incurred by producing companies. These rates are lower (6.25% and 26.25%, respectively) for costs incurred in Québec's Near North or Far North.

Eligible companies must be active and have a place of business in Québec. The eligible expenditures for the purpose of calculating the tax credit are those that give rise to an entitlement to a deduction of at least 125% under the current flow-through-share regime. This credit is taxable under the *Taxation Act*, the *Mining Duties Act*, and the federal *Income Tax Act*. Companies have the option of using this credit or the flow-through-share financing program.

In addition, the credit on duties refundable for losses provided under the *Mining Duties Act* is equal to 12% of the lesser of two amounts: the annual loss, or the exploration, deposit appraisal and mine development expenses. The credit is increased to 15% if the exploration expenses have been incurred in Québec's Near North and Far North and the tax credit for resources has not been claimed for the expenses. The credit on duties refundable for losses is non-taxable and does not reduce the amount of exploration expenses that a mining company can claim under the *Mining Duties Act*, the *Taxation Act*, and the federal *Income Tax Act*.

An additional deduction of 50% of qualifying exploration expenses may also be granted under the *Mining Duties Act*, up to a limit of 50% of annual profit. Eligible expenses include surface exploration and underground drilling work performed on land that is not under a mining lease or mining concession, or where no extraction work has been carried out in the previous five fiscal years.

Access to Public Funding, Venture Capital and Exploration Partners

The Québec *Taxation Act* allows a Québec taxpayer (individual) to claim a substantial tax deduction for investments in flow-through shares. The Québec regime allows for a base deduction equal to 100% of the cost of flow-through shares. For shares acquired since March 31, 2004, individuals may deduct an additional 25% when the exploration costs are incurred in Québec by a company not engaged in the mining of mineral resources. A further 25% may be deducted if the exploration is done from the surface, bringing the total deduction to 150% of the cost of the investment.

Another amendment with respect to flow-through shares has been in force since March 31, 2004. Upon the sale of shares, an investor may benefit from an exemption on the capital gain realized on the portion of the sale price between the cost of acquiring the shares and their adjusted cost base, which is deemed to be zero.

For the 2007 taxation year, taking Québec and federal tax benefits into account, the net cost of a \$1000 investment in flow-through shares totals some \$284 for a Québec individual at the highest marginal tax rate.

Several venture capital funds are dedicated to companies involved in mineral exploration in Québec, including SIDEX (Société d'investissement dans la diversification de l'exploration [exploration diversification investment corporation], see www.sidex.ca). The mission of SIDEX is to invest in the capital stock of companies with exploration projects that will lead to the diversification of the Québec mining industry, both in terms of commodities extracted and in terms of mineral-producing regions. The initial capital for SIDEX was set at \$50 million and was provided by its two limited partners: the Québec government (70%) and the QFL Solidarity Fund (30%). In 2007, SIDEX made 17 investments totaling \$3.8 million.

In addition to contributing to SIDEX, the QFL Solidarity Fund (www.fondsftq.com) invests in 44 mining exploration and production companies, primarily through regional funds.

SODÉMEX (Société de développement des entreprises minières et d'exploration [mining and exploration company development corporation]) and SODÉMEX II are limited partnerships held by Capital d'Amérique CDPQ and SGF Minéral Inc. They participate in the development of the mining industry in Québec by investing in junior exploration companies and mining producers with activities in Québec whose market capitalization is below \$125 million. These companies are also active on the secondary market. The investment portfolio of these companies is managed by Gestion SODÉMEX.

The Société de développement de la Baie-James (SDBJ) (James Bay Development Corporation) has set up an investment fund that can invest between \$100 000 and \$500 000 in mining exploration in the James Bay region (www.sdbj.gouv.qc.ca). In 2007, the fund announced investments in three exploration projects totaling \$332 000.

Finally, the Québec Ministry of Natural Resources and Wildlife continued to encourage Aboriginal communities in the Near North and Far North to participate in the development of the mineral potential of this vast area. To that end, a budget of \$300 000 was granted in 2006-07 to two Aboriginal mining funds – the Cree Mineral Exploration Board and Fonds minier Innu Nitassinan (Nitassinan Innu mining fund) – and \$340 000 was granted to a third, the Fonds d'exploration minière du Nunavik (Nunavik mining exploration fund).

2.6 ONTARIO¹¹

Exploration and Development Highlights for 2007

Overview

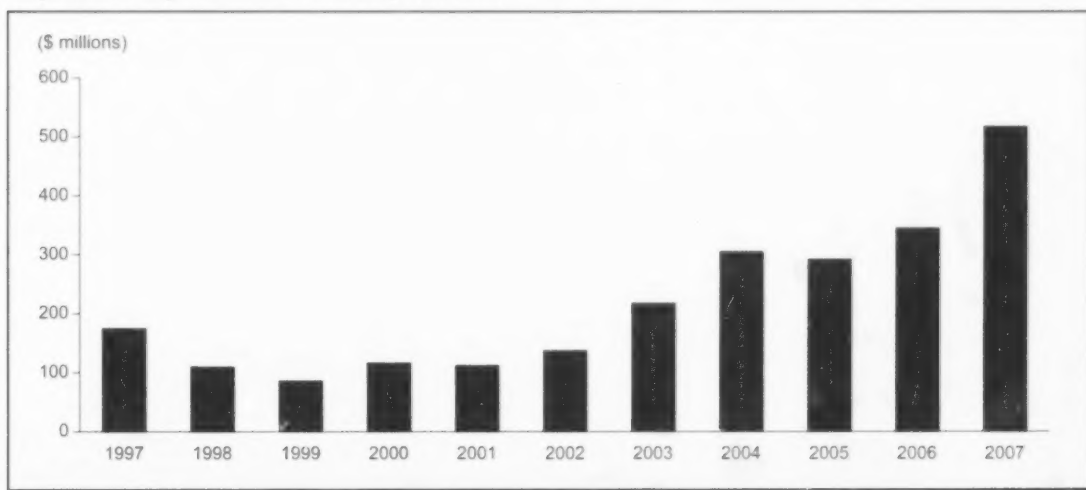
Mineral exploration and development flourished in Ontario during 2007 as claims reached record levels, exploration spending climbed to record levels, two new mines opened, and new discoveries created claim-staking rushes. Ontario continued to lead Canada in exploration expenditures and is among the top 10 jurisdictions worldwide. Much of this can be attributed to the high quality of infrastructure available, the diverse and unexplored geology, accessible and reliable geoscience information, a stable regulatory environment, and favourable taxation policies, including a permanent 5% flow-through-share program.

Ontario led all Canadian provinces and territories in exploration and deposit appraisal expenditures with \$519 million in spending in 2007 (**Figure 17**). Most of the increase in 2007 is attributable to more spending at the deposit appraisal phase as development work continues on many of the larger nickel-copper projects. Final exploration and deposit appraisal expenditures for 2006 totaled \$347 million, up from \$294 million in 2005. Spending by junior companies rose to \$211 million from \$160 million in 2006 and now accounts for 40% of expenditures.

Gold remained the primary focus of exploration in the province, but significant activity is under way on nickel-copper development projects in the Sudbury area, such as Xstrata's Nickel Rim project and Vale Inco's Totten project, which have dramatically increased spending on base metals. Sustained higher metal prices are also leading to an increase in exploration for other minerals such as uranium, molybdenum, and silver.

¹¹ The Ontario review of activities was prepared by staff of the Ministry of Northern Development and Mines. For more information, the reader is invited to contact Brock Greenwell by telephone at 705-670-5896 or by e-mail at brock.greenwell@ontario.ca.

Figure 17
Exploration Expenditures in Ontario, 1997-2007



Source: Ontario Ministry of Northern Development and Mines.

The most anticipated mining event in Ontario during 2008 will be the commencement of production at De Beers Canada Inc.'s Victor diamond mine in the James Bay Lowland area. The construction of this \$1 billion mine continues to attract attention from the exploration community, and companies exploring in the Far North area (north of 51°N latitude) are taking advantage of the infrastructure developed during the construction of the mine. There are employment opportunities for Aboriginal communities in the surrounding area, northern Ontario, and the rest of Ontario to participate in the expected contribution of \$6.7 billion to the Ontario economy. De Beers Canada and the provincial and federal governments have been working closely with First Nations communities in the area to develop training centres and programs. Exploration expenditures on diamonds reached \$34 million in 2006, up significantly from \$5 million in 1998, and a much more diverse group of companies are conducting the exploration.

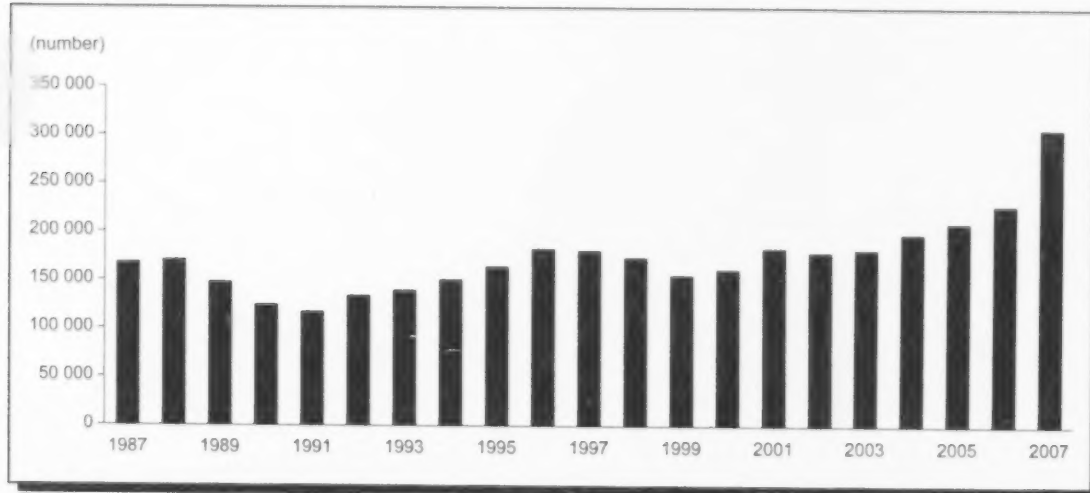
Ontario reached 308 000 active claim units in 2007, a record level and almost double the number of claims from eight years ago (**Figure 18**). The number of mining claim units in good standing in Ontario was 229 000 in 2006, up from 213 000 in 2005. Claim staking was active in new areas, such as the McFauld's Lake project in the Far North, and in older areas such as the Sudbury mining camp. Thunder Bay led all mining divisions followed by Timmins. The value of assessment work in Ontario climbed to \$88 million in 2006 from \$68 million in 2005.

Ontario retained its position as the lead Canadian province in the value of non-fuel mineral production as the value soared to \$9.4 billion in 2006 from \$7.4 billion in 2005. Preliminary estimates for 2006 indicate that the total value of Ontario's mineral production in the two commodity groups (metals and nonmetals), which comprise the industry total, was \$6.9 billion for metals, a \$2 billion increase from 2005, and was \$2.5 billion for nonmetals. Increases in the price of nickel, copper, and zinc are responsible for much of the increase. **Figure 19** shows Ontario's active mines in 2007.

Base Metals

At FNX Mining Company Inc.'s Podolsky property in the northeastern part of the Sudbury Igneous Complex, advanced exploration has defined an initial measured resource and probable reserve estimates for the lower, southwest portion of the 2000 deposit where the company recently drifted into a

Figure 18
Active Claim Units in Ontario, 1987-2007



Source: Ontario Ministry of Northern Development and Mines.

Figure 19
Ontario Mining Operations, 2007

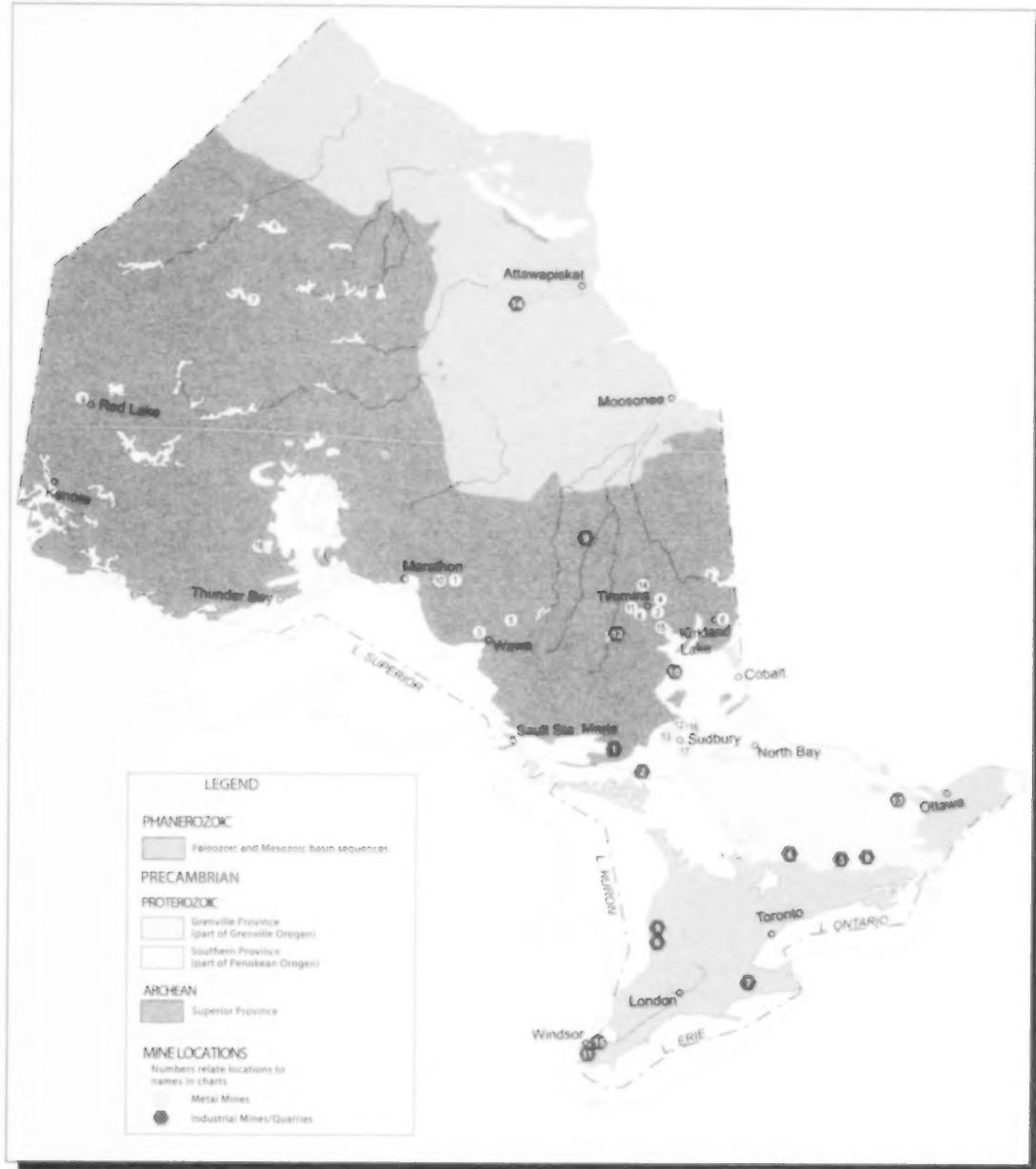


Figure 3
Ontario Mining Operations, 1997



Figure 19 (cont'd)

GOLD MINES

- | | |
|---------------------|--|
| 1. David Bell Mine | Teck Cominco Limited, Barrick Gold Corporation |
| 2. Dome Mine | Porcupine Gold Mines - Goldcorp Inc. |
| 3. Eagle River Mine | Wesdome Gold Mines Ltd. |
| 4. Hoyle Pond Mine | Porcupine Gold Mines - Goldcorp Inc. |
| 5. Island Gold Mine | Richmont Mines Inc., Patricia Mining Corp. |
| 6. Macassa Mine | Kirkland Lake Gold Corporation |
| 7. Musselwhite Mine | Goldcorp Inc. |
| 8. Pamour Mine | Porcupine Gold Mines - Goldcorp Inc. |
| 9. Red Lake Mine | Goldcorp Inc. |
| 10. Williams Mine | Teck Cominco Limited, Barrick Gold Corporation |

BASE-METAL MINES

- | | |
|--|-------------------------|
| 11. Kidd Creek Mines
(copper, zinc) | Xstrata Plc |
| 12. Lockerby Mine | First Nickel Inc. |
| 13. Levack Mine
McCreedy West Mine | FNX Mining Company Ltd. |
| 14. Montcalm Mine | Xstrata Plc |
| 15. Redstone Mine | Liberty Mines Inc. |
| 16. Sudbury Operations:
Copper Cliff North
Copper Cliff South
Creighton
Garson
Gertrude West
McCreedy East/Coleman
Stobie | Vale Inco Limited |
| 17. Sudbury Operations:
Fraser
Onaping/Craig
Lindsley | Xstrata Plc |

PLATINUM GROUP METAL MINES

- | | |
|------------------|-------------------------------|
| 18. Lac des Iles | North American Palladium Ltd. |
|------------------|-------------------------------|

MAJOR INDUSTRIAL MINERAL OPERATIONS

- | | |
|---|--|
| 1. AMP Quarry (carbonatite) | Agricultural Mineral Prospectors Inc. |
| 2. Badgeley Island Quarry (silica) | Unimin Canada Ltd. |
| 3. Blue Mountain Operations (nepheline syenite) | Unimin Canada Ltd. |
| 4. Cavendish Twp. Mine (vermiculite) | Regis Resources Inc. - Vermiculite Canada |
| 5. Goderich Brine Field (salt) | Sifto Canada Inc. |
| 6. Goderich Mine (salt) | Sifto Canada Inc. |
| 7. Hagersville Mine (gypsum) | CGC Inc. |
| 8. Henderson Mine (talc) | Dynatec Minerals Division - Canada Talc Division |
| 9. Kapuskasing Phosphate Operations (phosphate) | Agrium Inc. |
| 10. North Williams Mine (barite) | Extender Minerals of Canada Ltd. |
| 11. Ojibway Mine (salt) | The Canadian Salt Company Ltd. |
| 12. Penhorwood Mine (talc) | Rio Tinto Minerals Group |
| 13. Tatlock Quarry (calcium carbonate) | OMYA (Canada) Inc. |
| 14. Victor Mine (diamond) | De Beers Canada Inc. |
| 15. Windsor Brine Field (salt) | The Canadian Salt Company Ltd. |

Source: Ontario Ministry of Northern Development and Mines.

high-grade massive sulphide vein from the 2450 level. Initial commercial production from the 2000 deposit is planned for the first half of 2008, with full production of 1200 tons per day expected by the end of 2008. The initial high-grade measured resource is now included within a larger probable mineral reserve of 324 000 tons grading 7.94% copper, 0.67% nickel, and 0.17 oz per ton of total precious metals.

Companhia Vale do Rio Doce (CVRD) has announced that it will spend \$11 billion worldwide in 2008, making it the largest annual investment program ever undertaken by any mining company. Sudbury area projects will continue to play an important role, as \$68 million will be spent by Vale Inco next year on the Totten project, and other development projects such as Copper Cliff Deep and Creighton Deep will be advanced. The company expects to double its spending on exploration and strategic studies in the Sudbury area to more than \$50 million in 2008.

Canadian Arrow Mines Ltd. initiated an aggressive exploration program on the Kenbridge nickel project near Kenora. Approximately 16 000 m of diamond drilling in a total of 123 drill holes has delineated the mineral potential above the 150-m level of the Kenbridge deposit. Plans by the company are to open-pit mine this portion of the deposit. In preparation for mining, environmental and engineering studies have been initiated. The mineral potential below the 150-m level will be the target of the Phase 2 diamond drilling program.

Noront Resources Inc. reported a diamond drill intersection of 5.9% nickel, 3.1% copper, 2.87 g/t platinum, 9.78 g/t palladium, 0.61 g/t gold, and 8.5 g/t silver over 68.3 m in drill hole NOT-07-5 on the Double Eagle project in the James Bay Lowland. Massive sulphide mineralization is hosted by coarse-grained peridotite. The project is located about 500 km northwest of Timmins and 160 km west of the De Beers Canada Inc. Victor diamond mine. News of the discovery prompted staking of hundreds of new claims by many junior mining companies that are exploring for additional mineralization.

Tribute Minerals Inc. is working toward obtaining an advanced exploration permit to perform underground bulk sampling and definition drilling on its Arrow zone polymetallic deposit on the Garnet Lake property near Red Lake. Golder Associates has started environmental baseline studies. A National Instrument 43-101-compliant resource of 2.071 Mt of 5.92% zinc, 0.75% copper, 0.58 g/t gold, and 21.1 g/t silver has been estimated for the deposit. Appreciable indium and gallium grades may enhance the project's overall economics.

Xstrata Nickel is investing \$8.7 million in the Thayer-Lindsley mine to extend its life by at least one year. The Nickel Rim nickel project is an important part of its growth, with an inferred resource of 13.4 million tons of mostly nickel, copper, platinum, and palladium. The \$850 million project should begin annual production of 1.25 million tons of ore in 2010. Development and exploration work also continues at the Fraser-Morgan property and at other Sudbury area mine properties.

Richview Resources Inc. initiated a 14 000-m diamond drilling program deep underground on its Thierry Mine copper-nickel-PGE property, west of Pickle Lake. The objective is to increase National Instrument 43-101-compliant inferred reserves of the known deposit by further extending mineralized zones at depth. The mine site has been refurbished and new buildings have been constructed to house the current operations.

MetalCORP Limited is actively exploring various polymetallic zones on the Big Lake property, southwest of Marathon. To date, 86 holes have been completed on various zones; however, most of the drilling has focused on the BL-14 copper-zinc zone at the eastern end of the property. Highlights from the BL-14 zone include holes BL07-32 (5.7% copper, 1.8% zinc, 95.0 g/t silver, and 1.0 g/t gold over 7.0 m) and BL07-24 (7.5% copper, 2.2% zinc, 138.0 g/t silver, and 9.2 g/t gold over 4.0 m). MetalCORP is currently drilling another 3000 m to test the lateral and depth extent of the BL-14 zone. On the western part of the Big Lake property, MetalCORP completed six drill holes, intersecting a molybdenum-rhenium-silver-bearing vein.

In the North Range of the Sudbury Igneous Complex, exploration at the Morgan-Lumsden property on the First Nickel/Xstrata Nickel joint-ventured Premiere Ridge project yielded favourable results with the discovery of massive sulphides. The estimated indicated mineral resource is 1.44 Mt grading 1.42% nickel and 0.54% copper at a 1.0% nickel equivalent cut-off grade, and indicates a probable mineral reserve of 1.15 Mt. First development ore is scheduled for March 2008, and yearly output will average 230 000 t. First Nickel has an option from project operator Xstrata Nickel to earn a 50% interest in the Morgan-Lumsden property.

Phoenix Matachewan Mines Limited is exploring the potential for volcanogenic massive sulphide (VMS) deposits on the Steel River property, east of Terrace Bay. Phoenix has outlined 11 targets based on airborne geophysics and geochemical anomalies indicating a folded chert exhalite unit extending 34 km across the property. To date, Phoenix has completed 16 diamond drill holes on the property and has highlighted two drill holes in the Prairie West area (PSR07-03 and PSR07-04) with anomalous values up to 0.95% zinc over 8.5 and 9 m, respectively.

FNX Mining Company Inc. continues to achieve success in advanced exploration in the north and east ranges of the Sudbury Igneous Complex (SIC). At the recently re-opened Levack mine in the Levack Complex of the North Range, discovery of the Main Depths Nickel Contact deposit down-dip of the formerly producing Levack Main orebody and east of the Levack No. 7 orebody was accomplished through surface exploration diamond drilling. Nine boreholes intersected significant pyrrhotite-pentlandite-chalcopryite nickel-rich sulphide mineralization. Exploration drilling of the Levack Footwall deposit (LFD) continues to expand high-grade copper, nickel, platinum, palladium, and gold assay data. Step-out drilling has confirmed that the LFD continues at depth, remains open along strike, and has extended the known mineralization down-dip at least an additional 600 feet to an overall plunge length of 2500 feet from the 3000 level to the 5400 level.

At the Lockerby mine in the Sudbury area, First Nickel Inc. completed an evaluation of the Lockerby Depth zone to the 72 level by means of a definition drilling program. Core intercepts (not true width) include 67.5 m grading 1.49% nickel and 1.26% copper (including 18.60 m of 3.01% nickel and 0.88% copper), and 35.4 m grading 3.61% nickel and 2.30% copper. Drilling is ongoing to delineate the deposit above the 72 level. Recent drilling has focused on the western boundary of the Lockerby Depth zone between the 63 and 56 levels. Next, the company will begin assessing the potential of the down-plunge extension of the deposit to approximately the 80 level. A second underground diamond-drill rig will focus on targets adjacent to previously mined areas of the Lockerby Main zones.

Liberty Mines Inc. has returned the Redstone mine in Eldorado Township to full production status with the construction and start-up of a new 1000-t/d nickel mill located 30 km south of Timmins. The company has a resource of 419 000 t grading 2.32% nickel at the Redstone mine and is presently mining about 200 t/d. Deep diamond drilling has confirmed the continuity of nickel mineralization to depth. Concurrently, Liberty is ramping into the McWatters nickel deposit, located 10 km to the east, where a historic resource of 620 000 t grading 1% nickel will provide additional mill feed to the Redstone mine.

Drilling on Golden Chalice Resources' Langmuir nickel discovery has defined a large mineralized system. The mineralization has been traced for at least 150 m in length along strike and down to a vertical depth of 250 m. Modeling and interpretation of drill results to date indicate the nickel zones strike roughly east-west with subvertical dips that are slightly to the north. Highlights of the recent drilling include drill hole GCL07-16. This hole returned an intercept of 0.93% nickel over a drilled width of 10.70 m from 38.8 to 49.50 m, including 1.2% nickel over 5.30 m from 38.80 to 44.10 m.

Millstream Mines Ltd. continued its drilling program on the Potter property in Munro Township, north of Kirkland Lake. Favourable results include drill hole S-07-22, which intersected three intervals of mineralization grading as high as 1.16% copper and 3.88% zinc over respectable widths. The mineralization encountered in the drilling of this hole varies from massive to disseminated sulphides.

Millstream's drilling program continues to expand the "stacked" mineralized massive sulphide zones located at the Potter property.

HudBay Minerals Inc. began a diamond drilling program on its southwestern Ontario zinc properties in November 2007. Four holes totaling 1200 m were planned to test coincident geophysical and geochemical anomalies identified in previous groundwater, soil, and Quantec Titan 24 geophysical surveys. The company's exploration land holdings in this area comprise approximately 10 900 ha, held under agreement with private land owners. The property has not been previously drill tested.

MetalCORP Limited continued exploration work on the North Rock nickel-copper-platinum property, roughly 25 km east of Fort Frances and 270 km west of Thunder Bay. A 25-hole, approximately 8000-m, Phase 3 diamond drill program will test various nickel-copper-platinum targets on the property in 2008. A majority of these holes will target the mineral potential of an ultramafic komatiitic volcanic flow. This unit is favourable to have potential for Kambalda-type nickel mineralization.

North American Palladium Limited, operator of the Shebandowan West joint-venture project with Vale Inco, reported the total measured and indicated resource estimate at Shebandowan West is 2.58 Mt grading 0.91% nickel, 0.62% copper, 1.09 g/t palladium, 0.34 g/t platinum, and 0.23 g/t gold. The Shebandowan West project, west of Thunder Bay, includes the Shaft, West, Road, and D zones, covering an area west of the former Shebandowan mine. North American Palladium expects to mine the resource underground and transport the ore by truck to the company's Lac des Iles mine, approximately 160 km north of Thunder Bay.

Magma Metals Limited is evaluating the copper-nickel-PGE-gold potential of the Current Lake peridotite, situated on the Thunder Bay North property, 50 km north-northeast of Thunder Bay. To date, Magma has completed 34 diamond drill holes in the Current Lake area. Highlights from diamond drilling on the northern end of the Current Lake peridotite returned assay values from drill hole TBND027 of 2.69 g/t platinum+palladium+gold, 0.31% copper, and 0.25% nickel over 28.55 m, including 4.66 g/t platinum+palladium+gold, 0.52% copper, and 0.35% nickel over 14.60 m.

Landore Resources Limited drilled 25 874 m on the VW zone, the B4-7 deposit, and other nickel targets on the Junior Lake properties, east of Armstrong. The company plans to advance the VW project through pre-feasibility in 2008, with possible construction in 2009. The VW zone contains an inferred resource of 4.2 Mt at 0.36% nickel equivalent. The B4-7 deposit is estimated to contain 1.5-2.0 Mt at 1.3-1.6% nickel equivalent.

Roxmark Mines Limited completed a 2711-m diamond drilling program on its Northern Empire Mine gold property at Beardmore and continued an extensive stripping, trenching, sampling, and mapping program on the Nortoba Tyson molybdenum-gold property, north of Beardmore. The company spent over \$1.7 million on both properties from 2006 to 2007. A 2030-t bulk sample (producing 7.23 t of molybdenum concentrate) was removed from the Nortoba property. Recent drilling at the Northern Empire property extended the known mineralized zones along strike by 200 m. A winter 2007-2008 drilling program will test the main Contact zone for 1200 m west along strike.

East West Resources Corporation and Eyeconomy Holdings PLC have spent in excess of \$1 million on trenching, drilling and geophysical surveys on their Marshall Lake property, west of Nakina. Several known zones have been tested. A number of newly exposed zones exhibit high-grade copper-zinc volcanogenic massive sulphide (VMS) mineralization. The property hosts a historical resource of 2.211 Mt grading 1.22% copper, 4.2% zinc, 2.45 oz per ton silver, and 0.012 oz per ton gold (*Canadian and American Mines Handbook 2006-2007*, p. 305).

Sage Gold Inc. completed 4440 m of diamond drilling in 16 holes from 2006 to 2007 on its Jacobus nickel-copper property, northeast of Beardmore. Key intersections returned 0.95% nickel and 1.16%

copper over 11.45 m, and 2.12% nickel and 1.02% copper over 6.6 m. A third-phase, 6000-m diamond drilling program was initiated on the property during the fall of 2007.

Ursa Major Minerals Inc. completed an advanced exploration, 50 000-t bulk sample from the Shakespeare deposit 70 km west of Sudbury in October 2007. Batch processing at Xstrata Nickel's Strathcona mill of over 45 500 t of ore with a head grade of 0.40% nickel and 0.46% copper was initiated on October 15, 2007. Overall nickel and copper recoveries into concentrates were 76.2% and 89.4%, respectively. Although not intended as a commercial operation, significant revenue is expected from the bulk sample. Environmental baseline studies for the project began in 2004 and a positive feasibility study was completed in 2006. Permit applications for two open-pit mines, a mill to process up to 4500 t/d, a co-disposal waste management facility, and related site infrastructure were made in October 2006. A certified closure plan was accepted in September 2007. The Shakespeare deposit contains a diluted probable reserve of 11 226 000 t grading 0.33% nickel, 0.35% copper, 0.02% cobalt, and 0.9 g/t precious metals. The company has received all major permits required to proceed with the project.

Gold

Lake Shore Gold Corp. has confirmed the presence of a gold deposit west of the Mattagami fault in Timmins. Five years of concerted diamond drilling has defined a gold reserve estimate of 3.4 Mt with a grade of 7.59 g/t gold at its Timmins West project in Bristol Township. Shaft sinking to a planned depth of 700 m is currently under way to extract a bulk sample. Lake Shore has also acquired the Bell Creek mine and mill with a 1500-t/d capacity from the Porcupine Joint Venture to process the bulk sample. Recent diamond drilling on the Thunder Creek zone, immediately adjacent to the Timmins West project, is also returning very significant gold intersections. Up to 24.61 g/t gold over 7.0 m has been reported.

Rainy River Resources Ltd. has raised over \$40 million to fund an aggressive exploration program on its Rainy River properties. Since acquisition three years ago, over 206 diamond drill holes have been completed on the Richardson Township gold project. In the past year, 34 reverse-circulation basal till and bedrock holes have also been completed on the property. These drilling programs have located six gold trends. Approximately 75% of the drilling was dedicated to delineating the 17/OBM gold zone, at 30-m centres, for a strike length of 800 m and a vertical depth of 350 m. Rainy River Resources Ltd. plans to release a National Instrument 43-101 resource estimate for the 17/ODM zone.

In partnership with Goldcorp Inc., Premier Gold Mines Limited is aggressively exploring the Rahill-Bonanza property just west of Red Lake, now significantly enlarged due to additional ground brought in by Goldcorp subsequent to its joint-venture agreement with Premier. The property is interpreted to host gold-mineralized structures from the Gold Eagle Mines property to the west, Goldcorp's Red Lake gold mines to the east, and the past-producing Wilmar mine situated on the present property. Premier spent approximately \$5 million on exploration (mainly diamond drilling) on the property in 2007.

Goldcorp Inc. has a major diamond drill campaign under way on the Hollinger and McIntyre mines in Timmins. Hollinger was the largest gold mine in Canada with production of over 19.3 million oz of gold mined from 1910 to 1968. McIntyre, with 10.7 million oz of gold produced from 1912 to 1989, is the third largest Canadian gold mine. Goldcorp has identified an additional resource of over 4 million oz of gold in the vicinity of the old mine workings and will commence a feasibility study to determine the viability of returning the Hollinger mine to producing status.

Kirkland Lake Gold Inc. continues to expand the New South Complex (SMC) gold zones near the Macassa mine in Kirkland Lake. The SMC consists of 15 or more mineralized zones, one of which is the New South zone. Five exploration programs dedicated to drilling on the SMC from the 5000 and 5300 levels continue to extend previously defined mineralization and intersect new zones. High-

lights include drill holes 53-866 and 53-864, which intersected the New South zone and assayed 2.09 oz per ton gold uncut (1.44 oz per ton cut) over a core length of 30.0 feet (28.8 feet true width) and 1.82 oz per ton gold uncut (1.49 oz per ton cut) over a core length of 25.6 feet (24.8 feet true width), respectively. Drill hole 53-650 intersected the New South zone on the far west limit of the West block and assayed 0.53 oz per ton gold over a core length of 53.5 feet (6.9 feet true width).

Pelangio Mines Inc. has a 50% equity ownership in Detour Gold Corporation after the sale of Pelangio's Detour Lake property to Detour Gold Corporation to help move the property through the development stage. The Detour Lake property hosts a near-surface mineral resource of 3.4 million oz of gold at the location of the former Detour Lake mine, which produced 1.8 million oz of gold from 1983 to 1999.

Northgate Minerals Corporation is exploring with three surface drills and one underground drill at its Young-Davidson property near Matachewan. Highlights include hole YD07-42B, on the eastern flank of the Lower Boundary zone, which intersected 46.80 g/t gold over 9.1 m, and hole YD07-50, drilled on the western flank of the Lower YD zone, which returned results of 5.54 g/t gold over 8.5 m. As ramp development advances, a second underground drill rig will be added. The results of these latest holes are being incorporated into a resource update for the project. Northgate projects that the property will be in production in late 2010.

St Andrew Goldfields Ltd., in an effort to re-open the Holloway-Holt complex north of Kirkland Lake, completed 2273 m of definition drilling and 841 m of development at the Holloway mine, as well as 1082 m of definition drilling and 1082 m of development at the Holt mine. The mill processed 76 410 t of development ore at a head grade of 3.9 g/t gold to produce 7953 oz of gold. The company continued advanced exploration at its Taylor project. The ramp was advanced 1091 m in 2007. A 3756-t mini-bulk sample from the Shaft zone was processed, producing 416 oz of gold.

Kodiak Exploration Limited uncovered a large gold-bearing vein structure, known as the Golden Mile, on its Hercules property, northeast of Beardmore. Stripping has traced the zone along a north-west strike for over 2 km, where channel sampling cut 11.6 m grading 32.96 g/t gold. Key intersections from the current drilling program on the Golden Mile zone returned 358.56 g/t gold over 3.6 m and 20.77 g/t gold over 4.1 m. The company has spent more than \$1.1 million in exploration on the Hercules property, including over 3500 m of diamond drilling.

Gold Eagle Mines Ltd. has engaged J.S. Redpath and AMEC Earth and Environmental to provide engineering, analytical, and supervisory services in order to obtain an advanced exploration permit to perform underground bulk sampling and definition drilling on Gold Eagle's BCD gold zone near Red Lake. A pilot hole for a planned 1460-m-deep exploration shaft was started in the third quarter of 2007. The company spent over \$11.4 million on surface diamond drilling in 2007.

Richmont Mines Inc. completed its first gold pour at the Island Gold property near Wawa in mid-November. It yielded one gold doré bar of an approximate gross weight of 530 oz. Processing of the mineralized material from the underground development and test mining continue. The deposit contains a measured and indicated resource of approximately 190 000 oz and an additional inferred resource of approximately 65 000 oz.

Houston Lake Mining Inc. continued work on three gold exploration projects in the Dogpaw Lake area, south of Kenora. Mechanical overburden removal, exposure washing, channel-cutting, geological mapping, ground geophysical surveys, sampling, and diamond drilling have been completed on the Angel Hill gold zone, Dogpaw Lake gold property, and McLennan gold zone. Houston Lake Mining Inc. increased its land holdings in the area by acquiring the Dubenski gold property. A diamond drilling program will also be initiated on this property based on consultant recommendations.

Apollo Gold Corp. has completed 39 surface core holes and 22 underground holes for a total of 8676 m drilled, in connection with the infill core drilling program at its Black Fox property near Matheson. Some very high-grade gold intercepts from this drilling could potentially add additional high-quality gold to the current reserve base of 1 002 000 oz of gold. For example, hole 07BF469, which is located in the proposed open-pit area, assayed at 42.17 g/t gold (1.356 oz per ton). Apollo has also drilled several deep exploration resource core holes, which, as anticipated, hit the Destor-Porcupine vein structure. The assays were very encouraging with one intercept, hole 07BF457, assaying at 34.01 g/t gold (1.09 oz per ton). These holes indicate there is good potential for additional mineralization at depth.

Queenston Mining Inc. completed 44 holes (37 462 m) as part of a resource definition program targeting the large mineralized corridor below the past-producing Upper Beaver mine in Gauthier Township, east of Kirkland Lake. The drilling is part of the 44 000-m resource definition program in progress to complete a National Instrument 43-101 mineral resource estimate on the property. Highlights include hole UB07-111 grading 29.0 g/t gold (0.85 oz per ton) over 4.6 m (15.1 feet) in the Lower Gauthier zone and hole UB07-112 grading 11.9 g/t gold (0.35 oz per ton) with 1.2% copper over 6.0 m (19.7 feet) in the Porphyry zone. The depth potential of the Upper Beaver mineralized corridor has been enhanced by the results of a recent Titan-24 geophysical survey. This survey has identified a number of deep targets below and adjacent to the mineralization outlined by the drilling to date. The resource definition program will continue into the first quarter of 2008 with two drills defining the lower portion of the system. At the conclusion of the program, the geophysical targets identified in the Titan survey will be drill tested.

Goldcorp Canada Ltd. spent approximately \$9 million on surface exploration on four of its gold properties within the Red Lake greenstone belt in 2007. To attain its goal of producing 1 million oz of gold in 2011, Goldcorp will invest approximately \$20 million in underground exploration and development at its Campbell and Red Lake mine complexes in 2007.

Rubicon Minerals Corporation is reviewing the permitting and budgetary requirements to deepen the McFinley shaft to allow underground exploration drilling of several target areas, including the Phoenix zone near Red Lake. Baseline environmental studies commenced during the year. Approximately \$2.7 million was spent in 2007 for surface diamond drilling on wholly owned and joint-venture gold projects in the Red Lake greenstone belt. A large proportion of the funds will be used to drill the company's 100%-owned Phoenix zone, where intersections as high as 34.14 g/t gold over 1.00 m have been encountered.

Brett Resources Incorporated is evaluating the mineral potential of two zones known as the "A" and "41" zones on the Hammond Reef property, 170 km west of Thunder Bay and 22 km northeast of Atikokan. Gold mineralization is associated with fracture-controlled quartz vein stockworks, hosted in a northeasterly trending zone of sheared granitoid rocks. In 1997, Roscoe Postle Associates Incorporated estimated an inferred mineral resource of 86 Mt averaging 0.93 g/t gold (for a total of 2.6 million oz of gold), at a cut-off grade of 0.4 g/t gold (pre-National Instrument 43-101). Brett Resources has completed 77 diamond drill holes on the Hammond Reef gold project for a total of 20 102 m. Recent drilling indicated greater thickness and better grades down-dip on the A-zone, intersecting mineralized zones often exceeding 100 m in width (up to 267 m) with grades better than 1.0 g/t gold. Brett Resources, operator of the Hammond Reef joint-venture project with Kinross Gold Corporation, entered into an agreement in 2006 to spend \$5 million over four years on the Hammond Reef property.

Premier Gold Mines Ltd. has initiated an extensive diamond drilling program on its recently optioned "Geraldton project." Three properties, including the Little Long Lac mine, the Magnet mine, and the Bankfield mine, were optioned from Roxmark Mines Ltd. this fall. Two drills are currently drilling known gold-bearing zones on the Little Long Lac mine property along the southern edge of Geraldton.

NFX Gold Inc. and Maximus Ventures Ltd. conducted a 10 000-m drilling program on the Larder Lake property. Some highlights from the Bear Lake high-grade gold zones intersected in hole no. 11 include 10.4 g/t gold over 5.2 m (including 20.8 g/t gold over 1.5 m) and 8.0 g/t gold over 10.2 m (including 18.6 g/t gold over 4.2 m). Drilling is ongoing in the Fernland area of the property where a six-hole program is testing the extension of high-grade gold mineralization intersected previously. Once the program at Fernland is completed, a \$3.75 million, 43 000-m follow-up diamond drilling program is planned for 2008.

Platinum Group Metals

Marathon PGM Corporation has slated a further \$3.8 million for an exploration and development drilling program for the Marathon platinum group element-copper project, 10 km north of Marathon. A definitive feasibility study is currently under way and scheduled for completion during 2008. Based on results from the company's 2007 drilling program, the total in-pit resource estimate was increased. The current measured and indicated (M&I) and inferred resources estimate is 3.54 million oz of platinum group elements and gold, 4.75 million oz of silver, and 585 million lb of copper.

Pacific North West Capital Corp. has begun a Phase 9B evaluation of the Interior River Valley Intrusive (RVI) east of Sudbury, budgeted at \$525 000. Further ground sampling, stripping, channeling, and continued evaluation on the RVI began in late 2007 to evaluate the mineral potential on platinum group metal zones identified in the 2006 mapping and prospecting programs. These new areas appear to be reflected by magnetic and induced polarization geophysical responses within the RVI. The current measured resource is 8.53 Mt containing 353 200 oz of palladium (1.29 g/t), 116 800 oz of platinum (0.43 g/t), and 20 400 oz of gold (0.07 g/t), and indicated resources of 22.02 Mt containing 600 700 oz of palladium (0.85 g/t), 212 800 oz of platinum (0.30 g/t), and 39 000 oz of gold (0.06 g/t). Joint-venture partner Anglo Platinum has committed over \$20 million to the River Valley project to date and may earn a 60% interest in the project by completing a feasibility study and a 65% interest by funding it through to production.

Benton Resources Limited is actively exploring the Bermuda property near Marathon, situated on the northwestern strike extension of the Marathon PGM deposit. Diamond drilling is ongoing over a 15-km strike length, targeting copper-PGE-mineralized zones hosted by the border gabbros of the Coldwell Complex. Highlights from recent drilling (fall 2007) in the Bamooos Lake area, approximately 100 m north of the Marathon PGM project, include holes BO-07-48 (1.91 g/t PGE+gold and 0.31% copper over 33 m) and BO-07-54 (2.19 g/t PGE+gold and 0.31% copper over 23.5 m). Benton is planning a further 10 000 m of diamond drilling for the Sally Lake and Area 41 targets, situated 14 km northwest of the Bamooos Lake area. Previous drilling by Benton in Area 41 returned assay values of 1.23 g/t PGE+gold and 0.28% copper over 61 m.

Diamonds

Dianor Resources Inc. is preparing to extract a bulk sample for diamond testing on the Leadbetter property in Chabanel Township, Wawa. Previous work by the company identified diamond-bearing, Timiskaming-like conglomeratic rocks with diamonds over 1 ct in weight. Extensive evaluation identified 550 Mt of conglomerate on the property. Referred to as the Brilliant Cut Formation, the conglomerate will be subject to bulk tonnage sampling to evaluate its diamond content and quality.

Tres-Or Resources Ltd. drilled a vertical, 275-m, NQ-size guide hole on its Lapointe Kimberlite property in the Kirkland Lake area in preparation for a 50-t macro-diamond test. The guide hole will permit recording and testing of the overburden materials and will document the nature of the kimberlite prior to the 50-t extraction test. Collection of the sample will employ a large-diameter reverse circulation rig and drill one hole in the central part of the Lapointe kimberlite.

Stornoway Diamond Corporation announced that the processing of 1.95 t of lamprophyre collected near Cobalt did not return significant numbers of diamonds. The company plans to spend \$1 million on the Timiskaming properties in 2008.

Uranium

Following a \$5.5 million diamond drilling program in 2007, Pele Mountain Resources received a positive scoping study for its Elliot Lake project from Scott Wilson RPA. Based on a 6.3 million lb indicated resource and a 36.1 million lb inferred resource, the study indicated that a \$195 million mine could produce 826 000 lb of U_3O_8 per year over an 18-year mine life, at a cost of US\$55.51/lb. The company now plans to prepare for the environmental assessment and mine-permitting process.

Montoro Resources Inc. recently announced significant intersections (up to 15.96 m) of a new style of mineralization following a 2755-m, 16-hole diamond drill program on its Serpent uranium property, located immediately east of the Pele property near Elliot Lake. This new style of mineralization is hosted in breccias below the Matinenda Formation and has not been previously recognized in the Elliot Lake area. This new style of mineralization presents a significant target upon which to focus additional exploration in the camp.

RPT Uranium Corporation has eight separate uranium properties in the Sibley basin, north of Thunder Bay. Exploration is concentrated on unconformity-style uranium and basement-hosted uranium mineralization in fault structures. Highlights from diamond drilling on the Black Sturgeon property (Split Rapids zone) include drill holes BS05-30, BSE07-03, and BSE07-31 returning 2.99% U_3O_8 over 1.50 m, 4.68% U_3O_8 over 0.72 m, and 0.222% U_3O_8 over 6.35 m, respectively. A diamond drilling program (2500 m) is currently under way on the Malborne Lake property (Frazer Creek zone), 100 km northeast of Thunder Bay. Stripping and sampling on the Frazer Creek zone exposed a series of three parallel, uranium-bearing zones. Eight grab samples collected from the Frazer Creek zone returned values ranging from 0.025% to 1.486% U_3O_8 with an average of 0.519% U_3O_8 .

El Nino Ventures Ltd./CanAm Uranium Corp. continued exploration of eight uranium prospects in the past-producing Bancroft camp in southeastern Ontario. A 3900-m drilling program was completed in 2007 to extend historic reserves on the two developed properties, including the Halo property in Cardiff Township and the Amalgamated Rare Earth No. 2 property 10 km to the southwest in Monmouth Township. The drilling programs on the two properties were designed to test the uranium and rare earth element potential in drill sections spaced at 60-m intervals down to depths of 1000 feet (305 m). The objective of the second phase of drilling was to define National Instrument 43-101-compliant reserves, expand the length and depth of the project, and reconfirm historical values. Reserve estimates in 1957 were 472 000 tons grading 0.112% (2.24 lb per ton U_3O_8). No exploration has been done over the last 30 years due to lower uranium prices.

Ontario – Committed to Mineral Development

Ontario is committed to maintaining international confidence in its well-earned reputation as a leading jurisdiction for mining by working to address issues such as sustainable development, land rights, and the interests of First Nations.

Ontario is working with industry and other ministries of the provincial and federal governments to improve regulatory efficiency without compromising the environmental responsibilities associated with mineral development. The new web site (www.serviceontario.ca/mining) provides a centralized location to access information, advice, regulatory requirements, and on-line services from various ministries related to the full range of mine development activities from prospecting, through mining, to reclamation and closure.

Extensive and objective information on Ontario's geology and its world-class mineral resources is provided by the Ministry's Ontario Geological Survey Branch and is available on the Geology Ontario web site at www.geologyontario.ca.

2.7 MANITOBA¹²

Overview

Exploration and Development

Sustained high metal prices continued to fuel exploration spending in Manitoba in 2007. Exploration and deposit appraisal spending intentions are estimated at \$103.1 million, nearly twice the \$52.9 million spent in 2006.

For 2007, the total area of mining claims and mineral exploration licences as of October 31, 2007, was 3 521 240 ha and the total area of mineral dispositions and leases in good standing as of October 31, 2007, was 3 664 933 ha. Surface exploration diamond drilling in 2006 totaled 99 650 m.

BASE METALS

Manitoba's proven potential to host world-class nickel-sulphide deposits attracted a number of junior companies that conducted feasibility-related work on previously discovered deposits and former producers. The most advanced project is that of Crowflight Minerals Inc. at the Bucko Lake deposit near Wabowden, south of Thompson. A positive bankable feasibility study was completed in February, indicating that Bucko has the potential to deliver a 118% internal rate of return with a US\$8.00/lb nickel price. The study used a figure of 1.8 Mt of measured and indicated resources grading 2.1% nickel. This figure was subsequently upgraded to 2.5 Mt of measured and indicated resources of 2.01% nickel. Crowflight has received provincial approval for an environmental licence for Bucko's operation, but awaits federal approval for a tailings disposal site. The company has met all of its option commitments with Xstrata Nickel and now owns 100% of the project. Construction of surface infrastructure and rehabilitation of the old shaft proceeded throughout 2007. The capital cost of project development to production is estimated at \$64 million. Crowflight plans to have Bucko in production in 2008 at a rate of 1000 t/d.

In regional exploration, Crowflight completed approximately 10 000 m of drilling on its TNB South and TNB North project areas under option from Xstrata Nickel. Drilling was successful in further defining the extent of nickel mineralization at two new 2006 discoveries: the Apex and M11A North zones. A new zone was also identified 330 m north of the Bucko deposit where drilling intersected 7.5 m of 0.78% nickel. Drilling at Halfway Lake, 20 km north of Wabowden, intersected 10.0 m of 1.35% nickel. Similar results were encountered at the Halfway Lake project by Falconbridge Limited in the mid-1990s and the deposit remains open in all directions.

Approximately \$100 million in capital spending was planned for 2007 at CVRD Inco Limited's Manitoba operations. Capital projects consist of smelter modernization, including a new dust-capturing system, continued mine development, and other work throughout the mines and processing plants. In October, CVRD Inco announced intentions to work towards extending the life of its existing Thompson facilities to 2027 and beyond.

Ongoing drilling by CVRD Inco near its Thompson mines has demonstrated significant potential for open-pit mining of two new deposits: the Thompson 1-C Surface zone and the 1-D Surface zone. Drilling projects to locate new zones of nickel mineralization are also returning encouraging results at depth at both the Thompson and Birchtree mines.

¹² The Manitoba review of activities was prepared by the Mineral Resources Division of Manitoba Science, Technology, Energy and Mines. For more information, the reader is invited to contact Ric Syme, Director, Manitoba Geological Survey, by telephone at 204-945-6556 or by e-mail at Ric.Syme@gov.mb.ca.

Victory Nickel Inc. completed a 13 000-m drilling program at its Minago property north of Grand Rapids. Drillcore from the program is being used to upgrade the resource estimate for the deposit and to provide samples for metallurgical testing and geotechnical data. One of the better holes from the program returned 36.0 m of 1.4% nickel. Overall drill results were reported to support past work on the property. Wardrop Engineering is in the process of conducting a bankable feasibility study that is due for completion in early 2008. The Minago deposit hosts National Instrument (NI) 43-101-compliant measured and indicated resources of 49.1 Mt of 0.516% nickel. The economics of the project can be enhanced by the presence of frac sand and other non-mineral by-products that may be generated during the proposed open-pit mining process.

Victory Nickel also completed a 30-hole drilling program at the Mel deposit located 25 km north of Thompson. The program was designed to expand the Mel resource figure and evaluate the near-term production potential. Drilling intersected significant grades over mineable widths, including 13.7 m of 1.11% nickel. The Mel project is under option from CVRD Inco and Victory has now completed the required exploration expenditures to earn a 100% interest. CVRD Inco has a back-in right that could lead to a 50:50 joint venture going forward. Mel has an NI 43-101-compliant indicated resource of 4.3 Mt of 0.88% nickel.

In Lynn Lake, Independent Nickel Corp. commenced a 20 000-m drilling program at the past-producing Lynn Lake nickel mine. The intent of the drilling program was to test four zones. In June, the company announced that drilling of the Upper G target intersected an unexpected zone of mineralization above the target area returning 11.9 m of 0.7% nickel and 0.4% copper. Wardrop Engineering was commissioned to conduct a pre-feasibility study to determine the technical and capital requirements to open the former producer. Results from metallurgical testing received in the fall confirmed that conventional milling and flotation processes will deliver very high metal recoveries from the nickel ores. The company is also actively pursuing the bioleaching of concentrate process, and initial bioleach test work has been very successful in delivering high metal recovery rates.

Western Areas NL of Australia optioned ground covering the former EL mine in Lynn Lake operated by Sherritt Gordon Mines Limited. A versatile time-domain electromagnetic (VTEM) survey was conducted and an initial drilling program of five holes tested four different targets. Wide zones of disseminated sulphides were reported from three of the targets, but assays have not been released. The EL mine produced approximately 1.0 Mt of 3.3% nickel and 1.1% copper during operation from 1954 to 1963. Included in the option agreement is the McBride Lake zinc property located 70 km east of Lynn Lake.

Also near Lynn Lake, VMS Ventures Inc. completed a three-hole drilling program on its Carr Lake property. Drilling confirmed the presence of anomalous nickel and copper values within mafic-ultramafic rocks similar to those hosting the Lynn Lake nickel-copper deposits. A VTEM airborne survey was completed over VMS Ventures' entire Lynn Lake property package consisting of four claim groups covering five of seven known gabbro plugs in the Lynn Lake camp. The survey outlined a number of conductors for future investigation for nickel-copper mineralization.

In the last two years, VMS Ventures has acquired a large ground position in the Flin Flon-Snow Lake Belt by staking, acquiring mineral exploration licences, and entering into option agreements. Each of the 12 prospective land packages has been selected for their potential to host volcanogenic massive sulphide (VMS) deposits. VMS Ventures completed a five-hole summer drilling program on three anomalies outlined by airborne geophysics and geochemical surveys at its Reed Lake property. In October, the company announced that assays from the second hole had returned 43.05 m of 4.38% copper and 1.56% zinc, plus precious metals. Holes 1 and 3 on the same VTEM target also returned encouraging base-metal values. VMS Ventures was planning to commence a second-phase drilling program in November to further define the new discovery.

HudBay Minerals Inc. boosted its 2007 exploration budget to \$45.2 million. This included \$8.5 million for the Bur copper-zinc deposit east of Snow Lake where the company is developing a decline to take a 10 000-t bulk sample and conduct a feasibility study. A production decision for Bur is expected in late 2007.

At its Lalor Lake property, southwest of Snow Lake, HudBay intersected a new zone of high-grade zinc mineralization. The initial drill hole intersected 45.13 m of 7.62% zinc and 0.19% copper along with significant precious-metal values. Drilling with up to four machines continued throughout the summer and fall and was returning very encouraging results. Other 2007 drilling programs focused on testing geophysical anomalies, known deposits, structural re-interpretations to discover new orebodies, and within and around operating mines. HudBay also signed option agreements on some of its Flin Flon-Snow Lake area properties with Rockcliff Resources Inc. and VMS Ventures, further leveraging its exploration opportunities.

Murgor Resources Inc. embarked on an aggressive drilling program in January on properties it optioned from HudBay Minerals in 2006. Three properties (Hudvam, Wim, and Snow-H) are in the Manitoba portion of the Flin Flon-Snow Lake Belt. Hudvam and Wim contain partially delineated copper-zinc deposits for which Murgor completed NI 43-101-compliant resource estimates early in 2007. A winter drilling program encompassing 20 holes was completed at Hudvam and returned encouraging results. Additional drilling is planned for 2008 leading up to a feasibility study later in the year. Current inferred resources at Hudvam stand at 1.19 Mt of 1.17% copper, 1.71% zinc, and 2.94 g/t gold. Ground geophysical surveys completed at both Hudvam and Wim have outlined new prospective targets near the deposits. Murgor commenced initial drilling at the Wim deposit in late August. The first phase of drilling 10 holes is designed to verify historical data by duplicating drill holes and verifying the continuity of mineralization with infill holes. A more extensive drilling program to boost the resource base is planned for early 2008. The Wim deposit contains an inferred resource of 2.06 Mt of 1.92% copper, 0.26% zinc, and 1.65 g/t gold.

Halo Resources Ltd. was conducting an extensive 30 000-m drilling campaign on its 200-km² Sherridon VMS property located 65 km northeast of Flin Flon. The property contains several known near-surface deposits and mineralized zones, as well as the past-producing Sherritt Gordon orebody. The property package is a combination of new claims, option agreements, and a mineral lease. Halo conducted drilling on four of the six known deposits during 2007, including Park Lake, Bob Lake, and Jungle Lake. Initial drilling programs are being conducted to confirm historical results and to explore for extensions to known deposits. Drilling has been successful in confirming massive sulphide mineralization and expanding the resource base. An NI 43-101-compliant resource calculation is being conducted for the Jungle Lake deposit, after which similar compilations will be completed for the remaining deposits. Additional drilling will be carried out in 2008 to further delineate ore zones and help advance projects to compliant resource calculations.

Rockcliff Resources Inc. signed option agreements to acquire 100% interest in seven property packages from HudBay Minerals. The properties are located within the Snow Lake area and contain the Rail, Reed, Kof, and Sylvia copper-zinc deposits, as well as numerous other prospective volcanogenic massive sulphide targets. After acquiring the optioned properties, Rockcliff acquired three exploration licences in the Snow Lake area and later staked additional claims adjacent to the Rail Lake property. Drilling at the Rail deposit commenced in October, initially concentrating on locating potential extensions of the deposit. A major drill program is planned for 2008 on the company's large property portfolio.

Cream Minerals Ltd. completed a short two-hole drilling program on its Wine property located 60 km southeast of Flin Flon. Drilling, to confirm a hole drilled by Hudson Bay Exploration and Development in 1987, intersected 20.4 m grading 1.30% nickel, 2.27% copper, and 0.05% cobalt, plus platinum group element (PGE) values. A second hole drilled to test the plunge of the mineralized zone failed to intersect the intended target.

Callinan Mines Limited and partner Bell Resources Corporation completed a VTEM airborne survey and drilled high-priority targets at their Fox River nickel property east of Gillam. Drilling examined seven separate conductive targets out of a total of 20 on the large, remote property. Drill holes intersected mafic and ultramafic intrusive rocks containing sulphide mineralized zones of varying thickness. Assay results returned low-grade nickel and copper-zinc values in two separate holes. Callinan also completed a five-hole drilling program on the Cal property northeast of Snow Lake. The project is following up on work by a previous operator that reported intersecting a thick mineralized zone containing nickel and copper values within a peridotite host rock. Callinan's drill holes intersected several zones of massive sulphide containing chalcopyrite within peridotite. Assay results are pending.

Pure Nickel Inc. reached an agreement with Xstrata Nickel to acquire a 100% interest in two nickel properties: the William Lake project and the past-producing Manibridge mine near Wabowden. Pure Nickel also signed an option/joint-venture agreement to acquire a 50% interest in Xstrata's Fox River project in northeastern Manitoba. The Fox River Belt is believed to be part of the same large-scale geological feature that hosts the Thompson and Raglan (Quebec) nickel deposits. Pure Nickel completed a 10-hole summer drilling program at the Fox property that returned assay values of up to 2.38% copper and 0.43% nickel. The company said the technical results of the 2007 drilling program increased the understanding of the geophysics and complex geology of the Fox property, which is deeply covered by glacial deposits.

In southeastern Manitoba, a scoping study released in January on Mustang Minerals Corp.'s Maskwa nickel deposit increased the total mineral resource to over 9 Mt, enabling a nine-year mine life with initial capital costs estimated at \$64.5 million. Mustang subsequently embarked on a 30-hole drilling program to upgrade the reserve figure, explore for additional mineralization, and assist with the preparation of a pre-feasibility study. The pre-feasibility study is in progress with a revised mine plan that will include an initial open pit lasting six years followed by an estimated two-year underground operation. Targeted production is expected to be 1 Mt/y of ore yielding 10 Mt of nickel in concentrate plus other metal credits.

Mustang has a second nickel-copper open-pit resource at the M2 zone on the Mayville property located 35 km by road from the Maskwa deposit. A mineral resource estimate released in January concluded that M2 contains indicated resources of 21.9 Mt of 0.20% nickel and 0.48% copper. Mustang is reviewing various methods to try and enhance the mineral potential of the M2 zone and the Mayville property. This includes exploring for new resources and/or using selective ore extraction processes.

PRECIOUS METALS

San Gold Corporation conducted an aggressive exploration and development program at the Rice Lake mine in Bissett. Development work on the 28th level (4200 feet) and the 29th level for production of the "93" and "98" veins returned some high-grade gold values. Face sampling of the "93" vein averaged 60.27 g/t gold over a true width of 1.5 m and a strike length of 53.3 m in early development. Drilling also discovered a new high-grade vein on the 28th level that assayed 39.7 g/t across 1.2 m. In addition, drilling below the 5300 level returned some high grades, including 6.8 m of 50.1 g/t within a 15.1-m intersection of 14.6 g/t gold. In the fall, San Gold reported new high-grade zones had also been discovered from drilling on the 30th and 32nd levels. From the 30th level, a 1.5-m intersection returned 113.1 g/t gold.

The first production ore from the San Gold #1 deposit was delivered to the mill in early April and the two operating mines were rapidly increasing their ratio of higher-grade production ore from initial lower-grade development material. Together the two mines were contributing 725 t (800 tons) of ore per day. Modifications to the mill's crushing circuit are being considered to increase overall mill capacity for anticipated increased tonnage from San Gold #1 and the addition of ore from the Cartwright zone. The company had its first gold sale in April since putting the operation back into production in 2006 and has made the transition from developer to producer.

Rolling Rock Resources Corporation completed a 28-hole drilling program at its Monument Bay project in northeastern Manitoba consisting of infill and down-plunge drilling of the main zones. Some highlights of the program include a 4.45-m interval of 10.17 g/t gold at the C zone and a 15.0-m intersection at the G zone that assayed 6.68 g/t gold. The company is highly encouraged by the down-dip extension of the G zone, which remains open along strike and down-plunge. The Monument Bay project has an NI 43-101-compliant inferred resource of 3.38 Mt of 6.45 g/t gold.

Garson Resources Ltd. and Piper Capital Inc., joint owners of the New Britannia mine (NBM) in Snow Lake, amalgamated to form Garson Gold Corp. in April. A 10 000-m first-phase drilling program began in February, starting with detailed drilling of the existing inferred resources at the NBM #3 zone, which currently stand at 220 000 t of 7.10 g/t gold. Drilling of deep holes encountered multiple gold-bearing intersections in some holes. Garson had completed 10 000 m by September and an additional 10 000 m was expected to be completed by year-end. Drilling is also planned for the NBM main deposit and the nearby Birch zone. An airborne magnetic survey and a soil geochemistry sampling program were also completed.

Black Pearl Minerals Consolidated Inc. conducted stripping and channel sampling in preparation for taking a bulk sample at the Gold Dust zone located southeast of Snow Lake. Initial results from channel samples from ore shoots returned high-grade gold values such as 545.9 g/t across 0.4 m and 116.1 g/t over 0.8 m. Black Pearl plans to selectively stockpile up to 9000 t of ore material over the winter and process it with an on-site mill in the spring of 2008.

Carlisle Goldfields Limited completed over 12 000 m of drilling at the MacLellan gold mine near Lynn Lake by mid-2007. Carlisle said that the presence of the MacLellan mine horizon has now been confirmed to the east, west, and up to 200 m below the present mine workings. Many drill holes returned multiple intersections, and examples of significant assay results included 9.0 m of 18.97 g/t gold and 5.75 m of 11.01 g/t gold. A second phase of drilling was scheduled to resume in October and an updated resource estimate was expected in the third quarter.

Wildcat Exploration Ltd. completed over 8000 m of drilling at its Jeep property east of Bissett in southeastern Manitoba. The drilling program extended the strike length of the No. 1 vein system of the former producing Jeep gold mine to 1.1 km. High-grade gold values of 56.38 g/t over 0.38 m and 36.04 g/t over 0.30 m were encountered. As well, drilling of a magnetic anomaly southeast of the Jeep shaft area returned elevated concentrations of nickel-copper and platinum group elements across significant widths.

Wildcat also conducted geological mapping, prospecting, and sampling programs at the Jeep property and at the Garner Lake property where previous sampling returned high-grade gold values. Drilling at the Poundmaker property west of Bissett to investigate mobile metal ion and geophysical anomalies commenced in early November.

Puma Exploration commenced a 3000-m drilling program at the Little Stull Lake gold deposit in northeastern Manitoba in June. The property was the subject of extensive drilling in the late 1980s and early 1990s by Westmin Resources Limited. At least five gold-bearing lenses were identified over a 2-km strike length. Puma's first objective is to confirm the historical, non-compliant resource calculation completed in 1991. At that time, Westmin estimated potential resources of 750 000 t grading 10.3 g/t gold. Puma's drilling results are pending release.

DIAMONDS

The search for diamonds in Manitoba continued in the Hudson Bay Lowland and Seal River areas west of Churchill. De Beers Canada Inc. completed a high-resolution airborne magnetic survey on a 20 000-km² land package at Seal River and reduced its exploration licences to cover the anomalous areas.

Peregrine Diamonds Ltd. has several exploration licences south of Churchill where an airborne magnetic survey has been completed on one of the properties. Planned exploration includes airborne and ground geophysical surveys and drilling as warranted.

Western Warrior Resources Inc. acquired exploration licences south of the Nunavut border, augmenting its Eppler Lake property west of Churchill. An initial diamond drilling program did not intersect kimberlite, although a number of anomalous gold and base-metal analyses were returned. A further 34 diamond targets remain to be tested on its properties.

URANIUM

The search for uranium in Manitoba is focused on the northwest corner of the province. CanAlaska Uranium Ltd. conducted a surface sampling program on its North East Wollaston project and discovered a large number of high-grade surface uranium showings. The uranium mineralization comprises two types. One is associated with granitic and altered sedimentary rocks and many of the target zones bear similar signatures to basement-style mineralization within the Athabasca Basin. A second mineralization type is associated with phosphate altered intrusive rocks. A winter drill program is planned, pending regulatory approval.

SPECIALTY/INDUSTRIAL MINERALS

Agrium Inc., a leading global producer of agricultural nutrients, holds a five-year, 45 000-ha exploration permit to explore for potash in the St. Lazare area. The company has conducted preliminary seismic surveys in its permit area and is reviewing the data. Agrium has the option to convert the exploration permit to a potash mineral lease within its five-year term to facilitate mining.

BHP Billiton, the largest diversified mining company in the world, has a 51% share of the Manitoba Potash Corporation (MPC), holder of a large potash deposit in the Russell-Binscarth area. The Province of Manitoba is a joint partner with 49% in MPC. In February 2007, the Province announced that BHP will spend \$15 million to explore the potential of the deposit.

Canexus Income Fund continues to produce sodium chlorate for the pulp and paper industry at its Brandon plant (formerly operated by Nexen Inc.), the world's largest at 263 000 t/y. Canexus purchases salt for the Brandon operation (the lowest-cost plant in North America) from Saskatchewan potash producers. A \$50 million expansion to increase the annual production capacity of the plant by 12% to 296 000 t will be commissioned in 2008.

Gossan Resources Limited has a high-purity dolomite property located north of Inwood. Inferred resources of over 132 Mt grading 21.32% MgO (including almost 35 Mt of measured resources averaging 21.18% MgO) were calculated on the basis of 43 drill holes. In September 2007, Gossan announced that favourable results were received in a chemical thermodynamic study of the Zuliani process, which could be used to extract 99.8% commercial-grade magnesium metal from dolomite at atmospheric pressure. Bench-scale testing is being planned. The extracted metal might be used to produce magnesium-aluminum alloy and as a structural metal in the auto industry in die casting.

Gossan Resources completed a drilling program in December 2006 on its high-purity silica sand property on the east shore of the south basin of Lake Winnipeg. The drilling outlined the edge of two zones with thicknesses greater than 8 m and average thicknesses of 11.5 m. In June 2007, two shallow test-pits were dug near the east end of the property; two new quarry leases were acquired the following month. In August 2007, an initial series of proppant tests were completed on various-sized sand samples; results exceeded all minimum oil and gas industry standards for frac sand. In addition, the sand also appears to meet metallurgical standards.

Victory Nickel Inc. had planned to carry out a drilling program in 2007 to test the open-pit silica sand by-product potential of its Minago nickel deposit (formerly held by Nuinsco Resources

Limited) south of Thompson. In November 2006, a scoping study estimated that about 25% of the 16.2-Mt, 10-m-thick Winnipeg Formation sand, overlying the nickel orebody, was of frac sand quality. Another 18% of the sand was suitable for other purposes, such as glass production and foundry sand. In December 2007, Victory Nickel projected a potential net sales revenue of \$187 million based on an annual production of 517 360 t of sand for 13.4 years (at an average free on board [FOB] Minago mine site price of \$26.84/t). The sand is overlain by 53 m of limestone, which also may be used to generate by-product revenue such as sales of road and rail construction aggregate.

Manitoba Geological Survey Activities

In 2007, the Manitoba Geological Survey (MGS) continued multi-year programs in the northern Superior Province, the Paleoproterozoic Flin Flon Belt, the eastern Kiseynew Domain and Thompson Nickel Belt (TNB), and the Bissett and Bird River regions of southeastern Manitoba. Phanerozoic investigations focused on posting new Williston Basin Targeted Geoscience Initiative (TGI) content to the project's web site, expanding the study of the Devonian Three Forks Formation, and completing the Surficial Geology Compilation Map Series. New field projects were initiated in the northern Superior Province, at Utik Lake, as the second year of a multi-year project aimed at updating the bedrock mapping database for greenstone belts in the region, and at the Notigi Lake area in the northeastern Kiseynew Domain.

The MGS is engaged in many partnered initiatives, including contributions from the federal government, the mineral industry, and several Canadian universities. The projects facilitate the training of future geoscience professionals, including, in 2007, one post-doctoral fellow, two Ph.D. candidates, and one M.Sc. candidate. Primary focuses for partnerships in 2007 were the Flin Flon TGI project and the Bird River suite of projects.

Targeted Geoscience Initiative

A significant portion of MGS work in 2007 was conducted as part of the Flin Flon Targeted Geoscience Initiative (TGI). The current TGI, announced in the February 2005 federal budget, is the third in a series of such initiatives since 2000. Federal funding for TGI-3 is \$25 million (nationally) to be spent over a five-year period that started on April 1, 2005.

The TGI-3 Flin Flon project is an integrated, multi-disciplinary geoscience study to aid in the discovery of new reserves of base metals in established mining communities of west-central Manitoba and east-central Saskatchewan. The project has been developed through joint provincial-federal-industry consultation and is delivered as a fully integrated partnership that includes the minerals industry, researchers from Canadian and American universities, and geologists from the MGS, the Saskatchewan Geological Survey (SGS), and the Geological Survey of Canada (GSC).

The TGI-3 Flin Flon project has three major sub-components encompassing three priority aspects. The Tier One (highest priority, lowest risk) sub-component focuses on base-metal-rich portions of the Glennie-Flin Flon-Snow Lake district and includes geoscience directly related to extending existing reserves of base metals and elucidating new occurrences in the district, specifically:

- a new 1:10 000-scale "cross-border" geological map of the Flin Flon area, with mapping led by the MGS and SGS; this map will form the surface of a "3-D knowledge cube" to be combined with subsurface information from GSC-funded seismic surveys and drill-hole information;
- the camp-scale 3-D knowledge cube will be underpinned by a 2-D seismic study and subsurface geochemical, stratigraphic and structure data incorporated from existing HudBay Minerals drilling;
- airborne surveys of part of the southern Glennie Domain in Saskatchewan (Deschambault Lake and northern Hanson Lake block), and remote predictive interpretation maps based on integration of the airborne surveys with targeted new mapping;

- supporting ore mineralogy, sulphide geochemistry, and isotopic studies;
- a metallogenic and metamorphic study of selected gold-bearing deposits from Snow Lake and the southern flank of the Kisseynew Domain; and
- new remote predictive synthesis maps of the Sub-Phanerozoic extensions of the Glennie-Flin Flon-Snow Lake district.

The Tier Two (second priority, moderate risk) sub-component will focus on regional Trans-Hudson base-metal potential and includes:

- magmatic nickel-platinum group elements potential and lithogeochemistry-isotopic studies of selected targets in the northern and western Lynn Lake and La Ronge greenstone belts;
- synthesis of the surficial geology of Saskatchewan and Manitoba, including supporting till geochemical analyses, air photo interpretation, and targeted surficial mapping;
- airborne surveys in the Wuskwatim-Notigi lakes area (west of Thompson), associated targeted field mapping, and supporting isotopic and geochemical analyses, resulting in new 1:100 000-scale maps of the eastern Kisseynew Domain; and
- an airborne survey in the Partridge Breast Lake area (north of Leaf Rapids) and updated bedrock geological maps of the Lynn Lake-Partridge Breast Lake area.

The Tier Three (third priority, highest risk) sub-component will focus on development of iron oxide-copper-gold (IOCG) till geochemical indicators through a collaborative project with TGI-3's "Deep Search" methods development project.

Bird River Projects

In 2005, the MGS initiated a government-industry-university partnership in the Neoarchean Bird River Belt of southeastern Manitoba. Partners in the initiative include the MGS, researchers, and graduate students at the University of Waterloo (partially funded by three exploration companies active in the belt, the university, and the Natural Sciences and Engineering Research Council of Canada). The group is undertaking mapping, structural analysis, and geochronological investigations in order to better understand both the evolution of the Bird River Belt and the setting of the various deposit types, and to support the exploration programs that are currently under way in the area. Work in 2007 completed the three-year project; M.Sc. students finished their field work in 2006. Field investigations by a University of Waterloo post-doctoral fellow have focused on the structural evolution and setting of the Bird River greenstone belt, while MGS field work provided regional and detailed stratigraphic mapping, and geochemical and geochronological investigations.

Other Projects in Manitoba's Precambrian Shield

An Archean mafic metavolcanic-dominated greenstone belt at Utik Lake in central Manitoba was mapped and studied in detail. Work also included an assessment of the potential of the area to host volcanogenic massive sulphide and gold deposits. Together with 2006 mapping in the nearby Bear Lake area, this study will provide an improved geological context and regional framework for base- and precious-metal exploration in the northern Superior Province.

The MGS and partners in the GSC continued a multi-year program, within TGI-3, aimed at defining the geographic extent of TNB-type inliers within what is currently mapped as younger Burntwood Group metaturbidite rocks in the northeastern Kisseynew Domain. Exciting and unexpected results from detailed mapping, isotopic and geochronological investigations have shown that an Archean basement, together with an autochthonous cover sequence, occur in this part of the Kisseynew

Domain. The origin, structure, and extent of these older rocks in the predominantly greywacke-derived migmatite of the northeastern Kiseeynew Domain are still poorly understood. This work has clear implications for nickel exploration, opening up new areas for consideration that would have been disregarded only five years ago.

A metallogenic and metamorphic study of selected gold-bearing deposits from Snow Lake and the southern flank of the Kiseeynew Domain by a McGill University Ph.D. candidate was supported by the MGS and the GSC. An investigation of sulphide-gold mineralization will provide new constraints on the timing of mineralization and a better understanding of the mineralogical and compositional consequences of mid-amphibolite-facies metamorphism on sulphide-dominated ore.

Within the TNB proper, an MGS-supported Ph.D. study on regional metamorphism was undertaken to better understand the tectonic evolution of the belt. Documenting the Ospwagan Group at various metamorphic grades will assist in the identification of these prospective rocks during exploration programs, especially in portions of the belt that have been subjected to higher grades of metamorphism.

Bedrock geological mapping in the Lily Lake area of the Rice Lake greenstone belt in southeastern Manitoba has improved the understanding of the stratigraphy and structure of the Neoproterozoic Edmunds assemblage, as well as the nature and setting of its contained gold occurrences. These occurrences are strongly analogous to epigenetic gold deposits in the Beardmore-Geraldton greenstone belt in the Superior Province and the Rankin Inlet greenstone belt in the Hearne Province. The regional tectonic setting and lithostratigraphy of the Lily Lake area are also substantially similar to those in the area of the Eléonore property in the James Bay district of Quebec.

The MGS has now completed the design of a searchable digital mineral deposits and occurrences database to replace the existing mineral deposit information that is accessed through the GIS Map Gallery. In the newly designed Oracle® database, contained information will summarize all of the non-confidential work that has been performed on specific properties.

Recompilation and updating of existing bedrock geology compilation maps resulted in the production of a seamless 1:250 000-scale digital geological base map for Manitoba with approximately two thirds of the province now compiled and edge-matched.

Phanerozoic Investigations

The "Williston Basin Architecture and Hydrocarbon Potential" Targeted Geoscience Initiative project was a multi-disciplinary geoscientific study aimed at characterizing and understanding the basin architecture and hydrocarbon potential in the Williston Basin. This two-year study ended formally in March 2005, but work continues to complete and publish project products. Interprovincial subsurface correlations are contained in a stratigraphic correlation chart and database of the study area, available for viewing and download on the Williston Basin TGI web page.

Three coreholes were drilled in the 2007 MGS Stratigraphic Corehole Drilling Program. One hole west of Lake Winnipegosis penetrated what is interpreted as hydrothermally altered dolomite within the upper part of the Silurian Interlake Group, beneath the Devonian Ashern Formation. This discovery would be significant because it would indicate that hydrothermal fluids have flowed through and locally altered the Paleozoic stratigraphic sequence, increasing porosity and permeability. Such alteration has implications for Mississippi Valley-type lead-zinc mineralization in Manitoba's Interlake.

The discovery of the new, conventional-oil Sinclair Field in southwestern Manitoba, with proven and probable reserves estimated at 6.8 million m³, has substantially increased Manitoba's oil reserves. New work by the MGS was conducted on the Devonian Three Forks Formation, which hosts the Sinclair Field, and a number of new exploration targets were identified.

Industrial minerals potential was investigated in the rural municipalities of Miniota, Archie, and Rosburn in southwestern Manitoba. Undeveloped deposits of Souris-type gravel, swelling sodium bentonite, potash, and sodium chlorate, or manganese, are present in some of the rural municipalities and would help diversify their economic base.

The Rural Municipality of Park was mapped in 2007 to update aggregate information for land-use planning. The nature of the landscape and proximity to Riding Mountain National Park have resulted in increased recreational development, which has in turn put increasing land-use pressure on aggregate deposits in some parts of the municipality.

The Surficial Geology Compilation Map Series (SGCMS) has been completed and was released on November 15, 2007, on DVD (second edition) and as a hard-copy 1:1 000 000-scale surficial geology map. The SGCMS provides seamless, province-wide coverage of all of the most current and detailed surficial geology available. The final compilation includes an innovative, two-sided, full-colour map that graphically illustrates the nature of each surficial unit in non-scientific terms.

The Winnipeg River in northwestern Ontario provides nearly half of the total flow into Lake Winnipeg and the Nelson River, and is the most important component of the hydro-electric system that generates power for Manitoba. A continuing study by a Ph.D. candidate at the University of Arizona uses a network of 54 tree-ring records to estimate changes in summer climate within the Winnipeg River basin since A.D. 1783. This MGS-supported research has demonstrated that, unlike most regional rivers, flow in the Winnipeg River system increased during the 20th century.

University of Manitoba researchers continued with a program to investigate revegetation of mine tailings with a preliminary field experiment designed to test the effects of tilling, fertilizing, and amending Gunnar tailings with paper-mill sludge.

Outreach

Manitoba Geological Survey mineral-education outreach activities were delivered through the Manitoba Rocks! program at the Manitoba Mining and Minerals Convention, National Engineering and Geoscience Week, Provincial Mining Week, and Earth Science Week at the Manitoba Children's Museum. Manitoba Rocks! offered free, hands-on activities developed to complement the Earth Sciences curriculum and to increase public awareness of the importance of Manitoba's mineral resources and mining industry.

Survey staff delivered mining and geology presentations to Aboriginal communities and schools in Fox Lake Cree Nation, the Nelson House Resource Management Board, and Northlands First Nation, as well as at Wolseley School in Winnipeg. In addition, staff attended Aboriginal conferences, such as Vision Quest and the Canadian Aboriginal Minerals Association.

Incentives

Mineral Exploration Assistance Program (MEAP)

MEAP provides financial assistance of up to 25% of eligible exploration expenditures to a maximum of \$300 000 per recipient per fiscal year to companies or individuals undertaking mineral exploration in Manitoba. The program, established in the fall of 1995, aims to increase mineral exploration and stimulate activities that may lead to the development of new mines and industrial mineral deposits. To further stimulate exploration in remote areas and areas affected by mine closures, MEAP was expanded to provide a higher percentage of assistance on eligible expenditures for projects in remote, under-explored northern regions and in the Lynn Lake/Leaf Rapids and Snow Lake regions. Companies or individuals may qualify for up to 35% of eligible exploration expenditures to a maximum of \$400 000 per recipient per fiscal year in these areas of the province. MEAP has two offerings per fiscal year to coincide with the spring/summer and fall/winter exploration seasons.

PROGRAM HIGHLIGHTS FROM OCTOBER 1995 TO OCTOBER 31, 2007

- A total of 156 companies have participated in MEAP and have completed 586 exploration projects.
- Of the 156 companies who have participated in MEAP, 115 are considered new to Manitoba.
- A total of \$149.0 million in exploration expenses has been reported.
- A total of \$22.0 million in assistance has been issued to 586 completed projects.
- Reported exploration expenditures under the program indicate that every \$1 million in assistance paid generated \$6.7 million in exploration expenditures.

MEAP-ASSISTED EXPLORATION

In 2007, HudBay Minerals' exploration program resulted in the Lalor Lake zinc-copper discovery near Snow Lake, which the company believes to be the most significant new zinc discovery in Canada in many years. Crowflight Minerals is developing a new nickel mine at Bucko Lake near Thompson and plans to have the mine operational in 2008.

In addition to HudBay's Lalor Lake discovery and Crowflight's Bucko deposit, the following seven projects have also received MEAP support and are undergoing feasibility studies for possible new mine development:

- Independent Nickel Corporation at the former producing Lynn Lake nickel-copper mine;
- Mustang Minerals' Maskwa nickel-copper deposit in southeastern Manitoba;
- Victory Nickel's Minago nickel-copper project northwest of Lake Winnipeg;
- HudBay Minerals' Bur zinc-copper deposit near Snow Lake;
- Carlisle Goldfields Limited's gold project at the past-producing MacLellan mine;
- Rolling Rock Resources' Monument Bay gold project in northeastern Manitoba; and
- Black Pearl Minerals at its Ferro/Wekusko gold property east of Snow Lake.

Manitoba Prospectors Assistance Program (MPAP)

MPAP was introduced in 1992 to provide financial support to self-employed prospectors and increase mineral prospecting in the province. Qualified applicants receive up to 50% of expenditures incurred to a maximum assistance level of \$7500 per applicant per year upon completion of the field project and submission of an acceptable report. Additional assistance of up to \$1500 per year for the cost of chartered fixed-wing aircraft is available for projects undertaken in more remote areas of the province.

Since the inception of the program, 295 projects have been completed with approved expenditures totaling \$2 551 081. A total of \$1 275 540 in assistance has been paid out.

Manitoba Mineral Exploration Tax Credit (MMETC)

The MMETC was introduced by the Government of Manitoba in April 2002 to promote investment in Manitoba-based exploration projects. The MMETC is a 10% non-refundable personal income tax

credit for investors in eligible flow-through shares of qualifying mineral exploration companies and can only be applied against Manitoba tax payable. The MMETC parallels and tops up the 15% federal exploration tax credit. Eligible investments and qualifying exploration activity are tied to federal eligibility, except that substantially all of the exploration activity must be undertaken in Manitoba. With the reinstatement of the federal tax credit in 2007, Manitoba also renewed its MMETC to continue to attract exploration investment to the province.

Assay Credit Program

For the 2006/07 fiscal year, the province allocated \$20 000 towards this program. A prospector can earn assay credit coupons for eligible expenditures on exploration work. Coupons can be redeemed for assays of gold, silver, copper, lead, nickel, zinc, molybdenum, chromium, titanium, or tin, as specified in Manitoba Regulation 64/92. Coupons can also be redeemed for geochemical analysis of other metals not covered in the regulation by obtaining permission from the Assessment Geologist of the Mines Branch.

In fiscal year 2006/07, a total of 20 701 credits were issued to eight prospectors; three prospectors redeemed 1937 credits.

Land Use

Manitoba has passed several acts designed to facilitate land and resource management and to support economic development and protection of the environment. The mineral resource/land management program promotes sustainability in the various provincial and municipal land and resource management planning processes. Program goals are directed at accommodating responsible mining and resource development, protecting the environment, minimizing land and resource use conflicts, and providing high-quality land and resource management planning and advisory services to planning authorities, industry, and other land management stakeholders.

Land-Use Assessment

The provincial Mines Branch, Land Management services provide technical support and advice to many legislative land-use review and assessment processes. All land-use proposals were assessed to ensure that the province's mineral resources were not compromised by surface development and that land-use conflicts were identified and mitigated. A new policy, procedures, and process for mineral access rights were developed for ministerial approval. In addition, the Provincial Land Use Policy for minerals is being reviewed for effectiveness.

Protected Areas Initiative

Manitoba's Protected Areas Initiative legally protects representative landscapes and ecosystems from logging, mining, and hydro development. It involves sectoral consultations to ensure that resource industries and communities are consulted on proposals for the establishment of protected areas. Currently, 8.3% of Manitoba is legally protected from mining development with an additional 5.7% supported for protection by the mining sector.

Manitoba is recognized as a national leader in terms of balancing the needs of the mining industry and the requirements of the protected areas program. Not one mineral disposition has been negatively affected by the Protected Areas Initiative.

More information on exploration and mining in Manitoba is available on the Manitoba Science, Technology, Energy and Mines' Mineral Resources Division web site at www.manitoba.ca/minerals.

2.8 SASKATCHEWAN¹³

Saskatchewan Exploration News Since November 1, 2007

- The Saskatchewan Ministry of Energy and Resources reported that, for 2007, the preliminary value of minerals sales in Saskatchewan was about \$4.6 billion.
- On December 31, there were 7961 active mineral dispositions in Saskatchewan totaling 13 266 341 ha, and 56 active potash dispositions totaling 1 541 693 ha.
- On December 13, UEX Corporation (UEX) received a new interim resource estimate for the West Bear deposit of 1.614 million lb U_3O_8 at 1.004%, which includes an increase of 223 000 lb of contained U_3O_8 .
- On November 14, Potash Corp. announced plans for a 2-Mt mine and mill expansion at Rocanville. Completion of the US\$1.8 billion project is scheduled for 2012.
- On November 5, Shore Gold Inc. reported an average modeled value of US\$170/ct for a 9740-ct parcel of diamonds collected during the underground bulk sample program of the Star Kimberlite.

Overview

In 2007, the value of sales from Saskatchewan mineral production was over \$3.16 billion. In a preliminary overview of Canadian mineral production by province and territory for 2006, Natural Resources Canada ranked Saskatchewan fourth with a projected 11.4% of Canadian mineral sales. The strength of Saskatchewan's mineral industry reflects its rich and diverse mineral endowment. The province remains the global leader in potash and uranium production, accounting for one third of the world's potash production and one quarter of its uranium production in 2006. Other significant mineral resources include gold, base metals, diamonds, salt, sodium sulphate, kaolinite, coal, aggregate, bentonite, and silica sand.

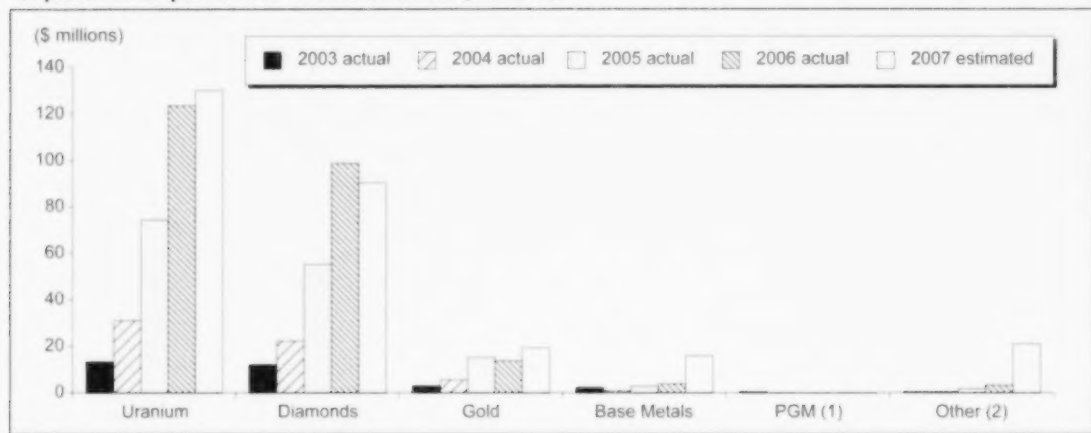
Mineral exploration expenditures in 2007 were forecast to top \$277 million, setting a new all-time record in terms of current year dollars and continuing a consecutive year-over-year increase from 2001 (\$22.9 million) to the present (**Figure 20**). Exploration was driven by strong potential for new discoveries, coupled with high commodity prices, particularly for uranium, potash and diamonds, but also for base and precious metals.

Mineral dispositions continue to be issued at record rates. As of November 1, 2007, there were a total of 7951 active mineral dispositions issued pursuant to The Mineral Disposition Regulations, 1986, totaling 13 199 242 ha. There were also 85 pending mineral dispositions covering a further 94 071 ha. In addition, there were 51 active potash dispositions covering 1 385 772 ha, with a further 1 681 632 ha of land for which potash permits have been applied for.

In the Athabasca Basin, the world's premier exploration district for high-grade uranium deposits, it is estimated that about \$130 million will be spent on exploration in 2007, up from actual expenditures in 2006 of nearly \$124 million. The spot market price of uranium rose dramatically in the first

¹³ The Saskatchewan review of activities was prepared by Jason Berenyi, Sean Bosman, Kate MacLachlan, Ryan Morelli, and Gary Delaney, all of the Northern Geological Survey; and by Mike Detharet of the Mines Branch, Saskatchewan Ministry of Energy and Resources. For more information, contact Gary Delaney, Director, Northern Geological Survey Branch (Regina), by telephone at 306-787-1160 or by e-mail at gdelaney@ir.gov.sk.ca.

Figure 20
Exploration Expenditures in Saskatchewan, 2003-07



Source: Saskatchewan Energy and Resources

Notes: (1) PGM: Platinum group metals. (2) Industrial minerals, including rare earth elements, potash, and clays.

half of 2007, cresting at US\$136/lb U_3O_8 in June before regressing to US\$85/lb by the end of October (Source: The Ux Consulting Company, LLC, www.uxc.com). Although the spot price has been volatile, long-term pricing has been more stable. Ongoing concerns about potential supply shortages, heightened by recent production shortfalls at mining operations around the world, are likely to ensure that the price of uranium remains strong for the foreseeable future. Exploration successes continue to be reported, underlining the continued prospectivity of the basin.

In 2007, uranium was produced from three operations: the McArthur River mine, the Eagle Point mine at Rabbit Lake, and the McClean Lake mine. In 2006, total production was 25.6 million lb of U_3O_8 , 18.7 million lb of which was produced from the McArthur River mine.

In 2007, gold exploration expenditures are expected to rise to \$19.5 million, compared to actual expenditures of \$13.8 million in 2006. The increased expenditures reflect a resurgence in the price of this precious metal, which has ranged between US\$620/oz and about US\$800/oz of gold during 2007. The majority of Saskatchewan's gold exploration activity was focused on the La Ronge and Glennie domains, north of La Ronge, and the Beaverlodge Domain in northwestern Saskatchewan. Claude Resources Inc.'s (Claude) Seabee mine remains the only producing gold mine. The cumulative production total from Seabee and bulk sampling from the nearby Santoy 7 satellite deposit was 32 157 oz of gold over the first three quarters of 2007, on pace to match the 2006 production total of 46 300 oz of gold.

Increasing prices for copper, zinc, and nickel renewed interest in exploration for base metals. Exploration expenditures are expected to be \$16 million in 2007, a significant rise over actual expenditures of \$3.9 million in 2006. Although the majority of base-metal exploration activity in Saskatchewan is centred on the Flin Flon Domain, particularly in the sub-Phanerozoic basement rocks, other prospective areas are in the Kisseynew, Glennie, Wollaston, and Tantato domains. There are currently 10 different companies exploring at least 14 base-metal properties in Saskatchewan.

Diamond exploration expenditures are forecast to be over \$90 million in 2007, down from the almost \$99 million in expenditures in 2006. The bulk of the 2007 expenditures will be at Shore's Star Diamond project and the Fort-à-la-Corne Joint Venture's (FaC JV) Orion Kimberlite Cluster project. Shore's Star kimberlite pre-feasibility study is nearing completion and the company will

soon have most of the information required to produce NI 43-101-compliant mineral resource and reserve estimates. Shore is also undertaking extensive engineering and environmental studies and hopes to advance the Star project to the mining stage by as early as 2012. The FaIC JV is a partnership between Kensington Resources Ltd., a wholly owned subsidiary of Shore (60%), and Newmont Mining Corporation of Canada Ltd. (40%). The FaIC JV is undertaking a \$66.5 million accelerated exploration and evaluation of the Orion Kimberlite Cluster. The focus of the work will be on the southeast end of the Orion Kimberlite Cluster, into which Shore has commenced sinking a shaft in preparation for an underground bulk sampling program. Several other companies are involved in various stages of diamond exploration around the province.

Record high potash prices and increasing global demand have spurred a staking rush for potash in Saskatchewan. In the first 10 months of 2007, the government received 51 applications for potash exploration permits totaling over 2.6 Mha. There are currently 11 different companies exploring for potash in Saskatchewan; at least three projects are moving to a more advanced stage of exploration.

In 2007, potash production was again from the province's eight underground operations and two solution mines. In 2006, the value of Saskatchewan potash sales was \$2.2 billion, which accounted for about 70% of the value of Saskatchewan mineral sales and for one third of global production. Potash production in 2005 set an all-time high at 16.7 Mt of potassium chloride, but fell in 2006 to 13.33 Mt of potassium chloride due to protracted negotiations with key Asian markets. Production and sales in 2007 are expected to meet or exceed previous record levels. The three potash-producing companies are making substantial investments to increase production capacities at existing operations.

Great Western Minerals Group Ltd. has continued evaluation and development of its Hoidas Lake rare earth mineral deposit with a 2006-07 winter program that consisted of 3700 m of drilling. Based on drilling results, it is estimated that the measured and indicated mineral resources at the JAK ore zone are 108% larger than originally anticipated.

Whitemud Resources estimates that construction of its \$47.8 million meta-kaolin processing plant, near Wood Mountain, is 85% complete. The company has begun mining the Gollier Creek kaolin deposit, and is stockpiling ore for the anticipated commissioning of the plant in early 2008. Whitemud Resources is also undertaking exploration to further increase its kaolinite resources.

Information Sources

This paper is a review of current activity only. Most localities referred to in the text are shown on **Figure 21**. The publication *Geology, and Mineral and Petroleum Resources of Saskatchewan*¹⁴ provides a more comprehensive summary of the economic geology of the province, including historical reserve and production data. Web sources for up-to-date information on all Saskatchewan mineral occurrences are the Saskatchewan Geological Atlas,¹⁵ Saskatchewan Mineral Deposits Index,¹⁶ and Saskatchewan Exploration and Development Highlights.¹⁷ All are available at the Saskatchewan Ministry of Energy and Resources web site at www.er.gov.sk.ca.

¹⁴ Saskatchewan Geological Survey (2003): *Geology, and Mineral and Petroleum Resources of Saskatchewan*; Saskatchewan Energy and Resources, Misc. Rep. 2003-7, 173 pp.

¹⁵ Slimmon, W.L. (2006): *Geological Atlas of Saskatchewan*, version 9 (2006); Saskatchewan Energy and Resources, CD-ROM, version 9.

¹⁶ Bennett, R.W. (2005): *Saskatchewan Mineral Deposits Index*; Saskatchewan Energy and Resources, Misc. Report 2005-6, CD-ROM, version 1.0.0.

¹⁷ Berenyi, J., Card, C., Morelli, R., Bosman, S.A., MacLachlan, K., Harper, C.T., Cunningham, K., Detharet, M., and Delaney, G. (2007): *Saskatchewan Exploration and Development Highlights 2007*; Saskatchewan Energy and Resources, 26 pp.

Figure 21
Marine Resource Map of Saskatchewan, 2007



Figure 21
Mineral Resource Map of Saskatchewan, 2007

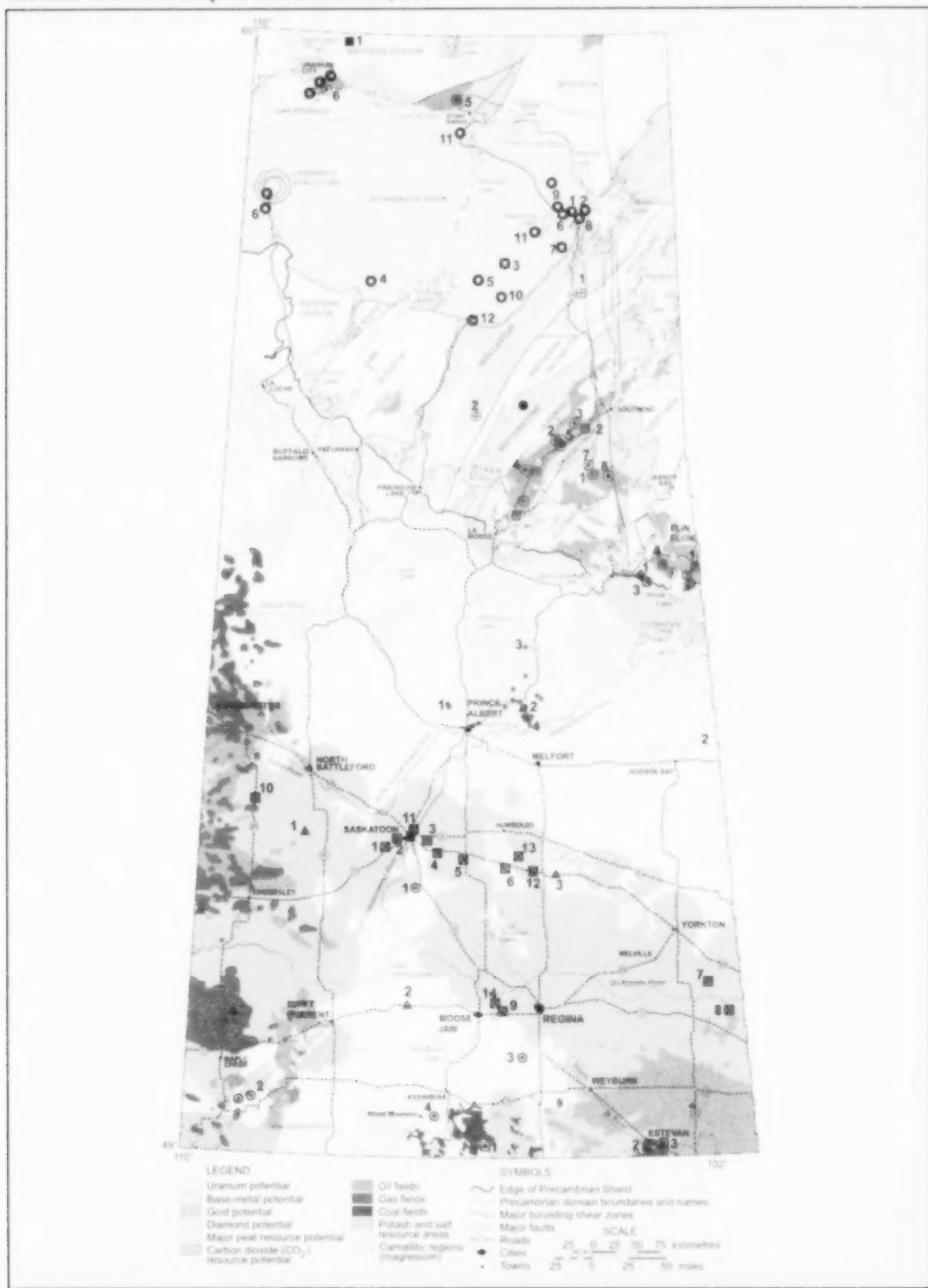


Figure 21 (cont'd)

URANIUM

Operating Mines

- McLean Lake Mine (North and South deposits, Sue A, B, C, and E deposits; AREVA Canada Resources Inc., 70%; Denison Mines Ltd., 22.5%; OUND (Canada) Co. Ltd., 7.5%)
- Eagle Point Mine (Cameco Corp.), ore processed at Rabbit Lake Mill
- McArthur River Mine (P2N Zone deposit; Cameco Corp., 69.805%; AREVA Canada Resources Inc., 30.195%)

Locations Referenced in Text

- Virgin River
- Midwest
- Millennium
- Moos Lake
- Shota Creek
- Cigar Lake
- West Bear
- Key Lake
- Raven and Horseshoe

Deposits and Past-Producing Mines

GOLD

Operating Mines

- Seabee Mine (Claude Resources Inc.)

Locations Referenced in Text

- Julu mine
- Waddy Lake (Golden Heart, Towler, Memorial, Koris, EPI zone Birch Crossing deposits)
- Bingo deposit
- Joppy Fork lakes
- Pinky deposit
- Goodfellow (Blox and Athol deposits)
- Santley deposit

Deposits and Past-Producing Mines

COPPER, ZINC and COPPER-NICKEL

Operating Mines

- Cathlamet Mine (Hudson Bay Mining and Smelting Co. Ltd.)

Locations Referenced in Text

- Brabant Lake deposit
- FCN deposit
- Milverton Bay deposit
- Axis and Culm lakes deposits

Deposits and Past-Producing Mines

LEAD-ZINC-SILVER

Locations Referenced in Text

- George Lake deposit
- Silo Lake showings

COPPER-NICKEL-PGM-GOLD

Hoffmeyer Past-Producing Mine

RARE EARTH OCCURRENCE

- Hodas Lake

KIMBERLITE OCCURRENCES

- Sturgeon Lake
- Orion kimberlite cluster
- Candle Lake
- Star Kimberlite

POTASH AND SALT

Operating Mines

- Verscoy potash mine (Agrim Inc.)
- Cory Division potash mine (Potash Corp. of Sask. Inc.)
- Palenice Lake Division potash solution mine (Potash Corp. of Sask. Inc.)
- Allen Division potash mine (Potash Corp. of Sask. Inc.)
- Colonsay potash mine (Mosaic Potash Colony Ltd.)
- Langdon Division potash mine (Potash Corp. of Sask. Inc.)
- Esterhazy K-1 and K-2 potash mines (Mosaic Potash Esterhazy)
- Rocanville Division potash mine (Potash Corp. of Sask. Inc.)
- Belle Plaine potash solution mine and fine salt plant (Mosaic Canada ULC)
- Unity solution salt mine and plant (Sifto Canada Inc.)
- Saskatoon chloride-based chemical plant (Sterling Pulp (Sask.) Chemicals Ltd.)

Locations Referenced in Text

- Saltm Project
- Bun Project
- Legacy Project

SODIUM SULPHATE AND POTASSIUM SULPHATE

Operating Plants

- Whiteshore Lake (Palo) sodium sulphate plant (Zeo Corp.)
- Chapin Lake sodium sulphate plant (Saskatchewan Minerals - A Division of Geotop Inc.)
- Big Quill Lake potassium sulphate plant (Big Quill Resources)

Past-Producing Plants

CLAY RESOURCES

- Saskatoon clay quarry and plant (Cindercrete Products Ltd.)
- Ravenscrag clay quarry (IXL Industries Ltd.)
- Wilcox bentonite plant (Canadian Clay Products Inc.)
- Golder Creek kaolin deposit (Whitemud Resources Inc.)

Deposit

COAL

Operating Mines

- Poplar River Mine (Prairie Mines)
- Boundary Dam (Shand, Costello, and Utility) Mine (Prairie Mines)
- Bentall Mine (Prairie Mines)

SILICA SAND

Operating Mines

- Hanson Lake silica sand deposit (Winn Bay Sand)

Source: Saskatchewan Energy and Resources.

Exploration expenditure forecasts are compiled from the federal-provincial/territorial Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures and from the annual survey of exploration expenditures by the resident geologists of the Northern Geological Survey Branch, Saskatchewan Ministry of Energy and Resources. Actual annual expenditures for previous years are from the same surveys. Grade, tonnage, reserve, and resource estimates reported herein are from a variety of public sources including published reports, public records, corporate web sites, and Saskatchewan Mining Association Fact Sheets. Estimates reported may not conform to current Canadian Institute of Mining and Metallurgy (CIM) standards and/or National Instrument 43-101 of the Canadian Securities Administrators. The Saskatchewan Ministry of Energy and Resources and the Government of Saskatchewan do not accept liability for any errors, omissions, or inaccuracies that may be included in, or derived from, this report.

Exploration

Uranium

Staking activity in and around the Athabasca Basin diminished somewhat during 2007 as much of the available land was under disposition. Over three quarters of the Athabasca Basin is now under disposition; in addition, several exploration projects are in areas adjacent to the Basin. More than 40 companies are actively exploring for uranium. Most of this activity is in the eastern part of the Athabasca Basin where the major deposits are located; however, following new exploration successes, the western part of the Basin has become the focus of new staking and grassroots exploration programs, many of which are joint ventures. The largest programs are those of major producers Cameco Corporation (Cameco) and AREVA Resources Canada Inc. (AREVA), as well as mid-sized Denison Mines Corp. and junior UEX Corporation.

Cameco, one of the most active explorers of the Basin, undertook a spectrum of programs ranging from greenfields exploration to advanced deposit delineation work. At the Centennial zone (98% UEM [50% Cameco-50% AREVA], and 2% Formation Capital), where previously uranium had been intersected near the unconformity at a depth of 791.1 m, Cameco, the operator, drilled six pilot holes in 2005 and 2006, many of which were mineralized. Six more pilot holes and two wedge cuts were completed in 2007. New pilot holes VR-026 and 027 returned 0.254% U_3O_8 over 5.1 m and 0.692% U_3O_8 over 15.7 m, respectively. The latter intersection included a 2.9-m interval of 1.92% U_3O_8 . Wedge cut VR-027W1 intersected 10.8 m grading 2.191% U_3O_8 , which included 1.9 m grading 5.444% U_3O_8 at its base.

At the Eagle Point mine, brownfields exploration programs were re-started in 2003 after a 10-year hiatus and new drilling continues to delineate zones for additional reserves. Cameco has increased the reserves at Eagle Point since the mine re-opened, adding 8 million lb U_3O_8 to the reserves in 2006 in spite of producing 5.1 million lb.

The Millennium deposit entered the pre-feasibility stage in 2006. The deposit is part of the Cree Extension project, partnered by Cameco, AREVA, and Japan Canada Uranium Co. Ltd; it is located southwest of McArthur River. The Millennium deposit has an indicated resource of 37.5 million lb U_3O_8 at 3.81% U_3O_8 and an inferred resource of 9.7 million lb U_3O_8 at 2.03% U_3O_8 .

The Mann Lake project, located 30 km southwest of McArthur River, is a joint venture between Cameco, UEM, and International Enxco. Operator Cameco drilled two holes from the same collar that targeted a conductor and resistivity low. In early March 2007, International Enxco announced that one of the holes intersected the unconformity at about 518 m, as well as four intervals of basement-hosted mineralization, highlighted by 7.12% eU_3O_8 ¹⁸ over 0.25 m and 5.53% eU_3O_8 over 0.4 m.

¹⁸ eU_3O_8 is a uranium assay calculated from the counts per second of gamma radiation recorded from a down-hole detection device (probe) as it is lowered or raised in the drill hole. Resulting counts per second are recorded at the surface and converted to uranium grade.

AREVA also completed both greenfields and mine-area exploration in 2006-07. In the western part of the Athabasca Basin, AREVA is the operator of the Shea Creek uranium project with partner UEX, which has now earned a 36.75% interest. The focus of work at the Shea Creek project was the Kianna deposit, located between the previously known Anne and Colette deposits. New basement mineralization intersections include directional cuts from pilot holes SHE-115 and 118. Drill hole SHE-115-11 contained a 15.1-m interval grading 6.72% U_3O_8 , SHE-115-14 contained 5.65% U_3O_8 over 1.7 m, and SHE-115-15A contained 7.11% U_3O_8 over 6.5 m. All of the intersections were between depths of 800 m and 850 m. In addition, SHE-118-8 contained 3.5% U_3O_8 over 5.7 m and SHE-118-8 contained 2.37% U_3O_8 over 8.7 m. These intersections were between a depth of 760 m and 810 m. Unconformity mineralization has also been prominent in the latest round of drilling, the highlight being 18.74% U_3O_8 over 1.2 m in a wider zone of 7.10% U_3O_8 over 3.9 m in SHE-118-8. The thickest intersection was 1.14% U_3O_8 over 16.8 m in SHE-118-4. Development has proceeded in conjunction with the exploration work at Shea Creek. A \$1 million program was to consist of: geotechnical logging of the pilot holes from the Anne and Kianna deposits, drilling of geotechnical holes for piezometer installation for groundwater monitoring purposes, and packer testing and water sampling of drill holes. In addition, a 950-m-deep exploration shaft has been proposed between the Anne and Kianna deposits at an estimated capital cost of \$100 million.

Along with joint-venture partner Denison, AREVA is actively exploring the Mae zone, located 3 km northeast of the Midwest deposit and about 200 m below surface. AREVA has reported intersections of 6.25% U_3O_8 over 7.1 m, 11.67% U_3O_8 over 7.7 m, and 1.14% U_3O_8 over 17.7 m. Follow-up drilling in 2007 was highlighted by MW-753, which intersected a zone of new, weakly mineralized sandstone, and MW-755, which intersected 2.71 e U_3O_8 over 21.9 m.

On the east side of the Basin, another of UEX's major programs was focused on its Hidden Bay property southwest of the historic Rabbit Lake deposits. UEX initiated a sonic drill-hole program in order to establish an NI 43-101-compliant resource for the West Bear deposit in early 2005. The resulting resource estimate was 1.391 million lb U_3O_8 at 1.385% (**Figure 21**). The best drill result to date returned 6.0% U_3O_8 over 10.7 m from diamond drill hole (DDH) UEX-206. At the Raven and Horseshoe deposits, UEX plans to initiate a final feasibility study and is currently working toward NI 43-101-compliant resource estimates for both. The new drilling at Horseshoe encountered intersections between 2.5 m and 61 m thick with grades varying between 0.07% and 1.08% U_3O_8 at depths between 130 m and 390 m. The range of grades and thicknesses in the latest round of drilling at Raven is similar to those at Horseshoe.

In the northern part of the Athabasca Basin, UEX continues work on its Black Lake joint venture with AREVA, for which UEX holds an 87.2% interest. In 2004, drilling on the property resulted in discovery hole DDH BL-18, which intersected 0.7% U_3O_8 over 4.4 m, including a maximum grade of 1.96% U_3O_8 over 0.5 m. Follow-up drilling in 2006 turned up more weakly mineralized rock, with the best result coming from hole BL-137 with an intersection of 0.79% U_3O_8 over 2.82 m. Drilling in early 2007 turned up further encouraging results. These include 0.67% U_3O_8 over 3 m in BL-140 and 0.24% over 3 m in BL-137. The mineralization at Black Lake is about 300 m below surface.

Denison, a mid-tier uranium producer, currently holds a 22.5% interest in McClean Lake and its associated reserves and resources, as well as a 25.17% interest in the Midwest deposit and the Mae zone. In the southeastern part of the Basin, Denison continued work at the Moore Lake joint venture with JNR Resources, for which Denison holds a 75% interest. The drilling program at the Maverick zone has yielded favourable results that build on 2004 exploration successes. The latest highlights from the Maverick zone were: an intercept of 3.2% U_3O_8 over 6.5 m, including 5.25% U_3O_8 and 2.1% nickel over 3.5 m in ML-140; 1.23% U_3O_8 over 8.5 m and 4.2% U_3O_8 over 2.1 m in ML-139; and 2.72% U_3O_8 and 2.3% nickel over 5 m in ML-133. Drilling has also continued on the "527" zone northeast of the Maverick zone, which has returned weak mineralized intersections, the best of which was 0.5% U_3O_8 over 7 m. Denison also continues to actively drill at several joint-venture and wholly owned properties.

The focus of exploration activity by many of the juniors active in, and adjacent to, the Athabasca Basin has begun to shift from airborne geophysical surveys to follow-up ground geophysical surveys and diamond drilling.

CanAlaska Uranium Ltd. has completed an agreement with the Black Lake First Nation to explore for uranium on reserve land. A similar agreement was concluded with the Fond du Lac First Nation in November 2006. CanAlaska has also reached a \$19 million agreement with a consortium of Korean companies, led by Hanwha Corporation, through which the companies may earn a 50% ownership position in the Cree East project. Partnership agreements for various projects have also been concluded with Mega Uranium Ltd. and PLC Yellowcake.

CanAlaska has been actively drilling several of its properties. At its West McArthur property (joint venture with Mitsubishi), weak mineralization was intersected in DDH WMA010, which contained 0.29% U_3O_8 over 0.5 m at a depth of 881 m, 14 m below the unconformity. At its Stewart Island property, DDH LAA002 and LAA003 intersected 1.16% U_3O_8 over 0.5 m and 0.18% U_3O_8 over 1.5 m, respectively. Both intersections were perched in the sandstone.

Hathor Exploration Ltd., along with joint-venture partner Northern Continental Resources, has begun drilling on its Russell Lake property. Historic drilling on this property intersected 3.45% U_3O_8 over 0.3 m and 0.4% U_3O_8 over 3.75 m in separate holes. Hathor (joint-venture partner ESO Uranium) has also begun drilling at the Carswell uranium project.

Several companies have initiated or completed drilling programs in the western Athabasca Basin, including Triex Minerals, Titan Uranium, and ESO Uranium Corp. Triex is also active in the eastern Athabasca Basin at Mann Lake and Pasfield Lake. Triex, along with joint-venture partner Thelon Ventures Ltd., announced the discovery of a crudely circular and concentrically zone basement high at its Pasfield Lake property. Drilling has intersected graphitic pelites in the basement and future drilling is planned. Forum Uranium has been actively drilling its Key Lake Road project located south of the Basin. The best intersections include 0.18% U_3O_8 and 0.15% U_3O_8 over 0.25 m at the DD zone. Pitchstone Exploration Ltd. announced that anomalous uranium had been intersected in two of three holes completed on the Gumboot property, northwest of Cigar Lake. Drill hole GB-01 intersected 1.75 m of 0.04% U_3O_8 in the sandstone, whereas hole GB-02 intersected 2.2 m of weak sandstone mineralization just above the unconformity.

In southwestern Saskatchewan, JNR Resources has concluded an option agreement with Uranium Power Corporation (UPC) whereby the latter, as operator, will earn an interest in the South Fork project east of the Cypress Hills. UPC plans to conduct an airborne EM and magnetic survey in the hope of delineating paleochannels that may be favourable for hosting roll-front uranium deposits.

Diamonds

Diamond exploration continued to be strong in 2007 with 101 new mineral dispositions, totaling 54 694 ha, issued in the Fort-à-la-Corne area alone. Dispositions continue to be issued in several other areas believed to have diamond potential. Diamond explorers were expected to spend about \$90 million in 2007, down from the actual expenditures of \$99 million in 2006. The bulk of the 2007 expenditures are targeted at two advanced-stage exploration projects in the Fort-à-la-Corne area: Shore's Star Kimberlite project and the FaLC JV's Orion Kimberlite Cluster project.

STAR KIMBERLITE

The Star Kimberlite (**Figure 21**), at the southeast end of the Fort-à-la-Corne kimberlite field, consists predominantly of pyroclastic, crater-facies rocks covering a footprint area of approximately 200 ha and ranging from 3 m to more than 607 m thick.

By the end of 2007, Shore will have spent an estimated \$60 million on an advanced exploration study of the Star Kimberlite. The study incorporates core drilling, geologic modeling, underground bulk sampling, large-diameter drilling (LDD), engineering studies, environmental studies, and diamond valuations. Shore's goals are to produce an NI 43-101-compliant mineral resource estimate by early 2008 and a full mineral reserve calculation by late 2008. Shore's current geologic model, supported by nearly 50 km of core drilling, suggests that Star contains 276 Mt of kimberlite in five distinct units: Cantuar, Pense, Early Joli Fou (EJF), Mid Joli Fou (MJF), and Late Joli Fou (LJF). These kimberlites are named for the Cretaceous sedimentary units into which they were emplaced. In addition, there are kimberlitic debris flows that are interpreted to represent reworked marine material derived mainly from the LFJ kimberlite phase. The EJF kimberlite has the highest grade of all the units and is the most volumetrically significant, comprising nearly 60% of Star.

In April 2007, underground bulk sampling of the Star Kimberlite was completed and the shaft was decommissioned. Phase 1 of the underground bulk sampling program recovered a total of 25 253 t of kimberlite from which 4049 ct of diamonds were recovered. Phase 2, which had the goal of attaining an additional 3000 ct, sampled 18 272 t of kimberlite from which 3016 ct were recovered. Phase 3, which aimed to recover diamond parcels greater than 1000 ct from each of the Cantuar and Pense kimberlite units, recovered 1633 ct and 1403 ct from 9139 t and 11 024 t of those units, respectively. The four largest stones recovered from the Star Kimberlite weighed 49.50, 22.56, 19.71, and 19.67 ct. Shore believes that the 49.50-ct diamond is a fragment of an even larger stone, and that the potential exists for >100-ct diamonds. Shore is confident in the quality of its diamonds, which have a high proportion of white and off-white coloured stones and coarse size frequency distributions. A diamond valuation of the entire underground bulk sample diamond parcel is currently under way.

The underground bulk-sample program provided ample information for grade determination in the three chief economic units (EJF, Pense, and Cantuar). It is noteworthy that these results are from a relatively small part of the Star Kimberlite, which is a geologically complex body. In an effort to expand its knowledge of grade distribution across the Star Kimberlite, Shore has undertaken an extensive LDD program.

Shore has completed 86 LDD holes on Star and Star West. The drilling program was laid out in a grid pattern across the massive footprint of the Star body and, to date, over 8000 m of kimberlite have been drilled, recovering more than 10 000 t. The results of this sampling will be reconciled with underground bulk sample results and used for resource and reserve estimations. Shore is currently investigating several engineering options to minimize mining and processing costs. At least eight different mining scenarios and two different processing plant designs are being considered. The company expects to complete the advanced exploration/pre-feasibility study by the first quarter of 2008, the full feasibility by the end of 2008 and, if the results are favourable, to be in production by 2011.

ORION KIMBERLITE CLUSTER

The FalC JV has budgeted \$66.5 million for an accelerated exploration and evaluation of the Orion Kimberlite Cluster. It is a 7-km-long zone of contiguous kimberlites that forms part of the FalC JV's holdings of 64 drill-tested kimberlite bodies that have geophysical footprints ranging from 2.7 ha to 250 ha. The larger kimberlite bodies are commonly composite in nature and comprise multiple eruptive phases of mainly pyroclastic, crater-facies deposits.

Based on extensive delineation drilling and the interpretation of airborne geophysics, Shore geologists believe the Orion Kimberlite Cluster contains an estimated 1.3 to 1.5 billion t, making it the largest known accumulation of contiguous diamondiferous kimberlite in the world. To date, 247 core holes intersecting 23 178 m of kimberlite have been drilled on Orion North. In addition, 20 LDD holes have yielded 7301 t of kimberlite that contained 318.98 ct. The four largest diamonds recovered from Orion North are 7.53, 3.00, 2.86, and 2.59 ct, respectively. The LDD results indicate

that kimberlite 120 and the central part of the 147-148 kimberlite complex are areas of high interest within Orion North. A total of 81 core holes have been drilled into Orion Centre, intersecting approximately 6.5 km of kimberlite. Similarly, on Orion South, 133 core holes have intersected over 11 km of kimberlite. The 30 LDD holes drilled into Orion South recovered 3729 t of kimberlite that yielded 308 ct. The three largest diamonds recovered from the Orion South LDD are 10.53, 10.23, and 5.21 ct, respectively. Initial results have prompted the FalC JV to focus its attentions on the Orion South portion of the cluster, an area that will be the target of an upcoming underground bulk sample program. Similar to the Star program, the goal of this project will be to recover enough diamonds to generate reliable grade estimates and diamond valuations.

Shore commenced the \$12 million underground bulk sampling project in July by freezing the overburden to permit safe excavation through the unconsolidated upper region of the shaft. The shaft collar has already been cast in concrete and excavation has commenced. The head frame from the Star diamond project has been erected over the Orion shaft. The joint venture expects to reach its 210-m target depth in the second quarter of 2008. It is estimated that some 5000 t of kimberlite will be recovered from the shaft alone prior to the development of lateral drifts. The shaft is strategically situated to permit access to the three dominant lithologies of Orion South kimberlite (EJF1, EJF2, and Pense). It should be noted that the EJF and Pense kimberlites of Orion South are named for the sedimentary formations they have intruded; they do not necessarily have a genetic correlation with the EJF and Pense kimberlites found in the Star Kimberlite. The FalC JV anticipates that this underground bulk sample project will be more efficient than the test at Star because the company has more data, thus allowing for an improved understanding of the geology. The total Orion South Complex is estimated to contain 360-400 Mt of kimberlite, of which the Pense and EJF lithologies comprise approximately 80%. The FalC JV also intends to continue with its LDD program across the entire Orion cluster.

OTHER DIAMOND EXPLORATION

Great Western Diamonds is awaiting the results of a mini-bulk test conducted on the C29/30 kimberlites in the Candle Lake area in March 2007. Nine large-diameter reverse-circulation drill holes recovered 503.31 t of +0.98-mm-size kimberlite. Great Western Diamonds is also awaiting the finalization of an agreement that would see Vaaldiam Resources Ltd. purchase all remaining shares of Great Western Diamonds. Great Western Diamonds also holds diamond exploration properties in the Snowden area and on the north and south flanks of the Primrose Lake Air Weapons Range.

Goldsource Mines Inc. estimates that it will spend \$650 000 to drill exploration targets on its Green River, Cross Roads, and Border claim blocks that are situated in the southwestern, central, and southeastern parts of the province, respectively.

Several other companies are involved in various stages of diamond exploration from grassroots heavy mineral sampling to geophysical surveying to drill-testing potential targets. The precedent of large kimberlite bodies combined with the abundance of unexplained diamond indicator mineral anomalies around the province continue to draw diamond exploration companies.

Gold

Gold exploration activity remained strong in 2007, due primarily to elevated commodity prices, with cumulative exploration expenditures anticipated to reach \$19.5 million. The bulk of activity remained focused on historically productive areas in the Precambrian Shield, specifically in Paleoproterozoic rocks of the Glennie, LaRonge, and Beaverlodge domains.

Claude Resources Inc. continued to explore near its currently producing Seabee mine in 2007, undertaking bulk sampling and definition drilling at the Santoy and Porky Lakes deposits. Combined, the Santoy 7 and Santoy 8 deposits contain an indicated and inferred gold resource of 1 100 000 t grading 6.53 g/t gold. Drill results from Santoy 7 varied from 5.6 to 48.2 g/t gold over 1.0- to 6.2-m vein

widths. Bulk sampling of 135 m of ore at Santoy yielded an average grade of 12.6 g/t gold. At Porky West, about 4500 t were mined from the 45-m level at 3.76 g/t gold, and approximately 2500 t were mined from the 65-m level at 5.61 g/t gold. Definition drilling at the Seabee deposit itself intersected a previously unknown, 6-m-wide mineralized zone grading over 15.5 g/t gold and two additional 5-m zones grading over 11 g/t gold.

GLR Resources Inc. continued evaluation of its Goldfields properties (Box and Athona deposits) on the north shore of Lake Athabasca, which consist of structurally controlled, granite-hosted quartz-vein systems. Drilling in 2006 returned 0.48 to 1.77 g/t gold over thicknesses of 3 to 37 m at Athona. Drilling in the vicinity of the Box deposit in 2007 further defined resources at depth and verified that proposed locations for mine buildings and waste-rock piles do not overlie mineralized zones. Collectively, the Box and Athona deposits host a measured and indicated resource of 1 041 200 oz of gold in 24 Mt of ore. A recently released bankable feasibility study for the Box deposit determined a proven and probable reserve of 601 000 oz of gold; a similar feasibility study is currently under way for the Athona deposit and will be completed early in 2008. It is anticipated that gold production from the Box deposit could commence in early 2009 and, to this end, GLR Resources has entered into contracts with major equipment suppliers for mining and milling equipment.

Golden Band Resources Inc. continued exploration and reserve/resource definition on several projects in the La Ronge gold belt in 2007. Most of this activity was focused on several deposits in the Greater Waddy Lake area, although an underground exploration program was also initiated at the Bingo deposit, located approximately 60 km to the southwest. Golden Band also acquired a 100% interest in the Dickens Lake property and a 49% interest in the Greywacke deposit, both located midway between the Bingo deposit and the company's mothballed Jolu mill. A newly initiated \$1 million drilling program includes a minimum of 3000 m of new holes at several properties. Pending proper permitting and a positive outcome to scoping studies at the Bingo, Komis, and EP deposits, production from these deposits could commence in 2009.

Wescan Resources Inc. also carried out work in the La Ronge gold belt in 2007 on its Fork and Jojay lakes properties. Exploration at Fork Lake concentrated on continuation of a soil sampling program that began in 2006. This more detailed sampling program identified several new target areas. An independent contractor was hired to perform a scoping study at the Jojay Lake property to bring reporting into compliance with NI 43-101 standards. The locations of four trenches and 37 drill holes have been established and will be included in the study. Wescan has also commissioned an environmental baseline study in preparation for a future underground exploration program.

Base Metals

Base-metals exploration in Saskatchewan remained steady in 2007 with new claims being staked throughout the northern part of the province. Most activities are focused in the Flin Flon VMS belt and in the Hanson Lake area, particularly in the Sub-Phanerozoic. Base-metals exploration is also being carried out in noritic sills of the Tantato Domain, in the metasedimentary rocks of the Wollaston Domain, and in the Kisseynew-Glennie domains.

In the Flin Flon Domain, Murgor Resources Inc. staked 31 additional mineral claims adjacent to the ground it optioned from Hudson Bay Exploration and Development in 2006. Murgor undertook 3805 m of drilling and completed a geophysical program that included a 280-line-km airborne VTEM survey and a 119-line-km ground TDEM survey. Historical resource estimates, at both the Fon and Abbot Lake deposits, were supported with NI 43-101 inferred resource estimates of 373.6 million lb of zinc, 25.0 million lb of copper, and 1.75 oz/ton silver (cut-off grade of 1% zinc) for Fon and 1.68 million lb of zinc, 7.57 million lb of copper, and 147 000 oz of silver (cut-off grade of 0.5% copper) for Abbot Lake. A \$3 million drilling program by Foran Mining Corporation commenced in September on the McIlvenna Bay deposit with the intent of converting current "inferred resources" to "indicated resources."

In the Kiseeynew Domain, Manicouagan Minerals Inc. continued drilling on the polymetallic Brabant Lake (MacKenzie or PEG) zinc-lead-copper-silver deposit and released an NI 43-101 "inferred resource estimate" of 4.858 Mt at 5.19% zinc, 0.57% copper, 0.28% lead, 22.59 g/t silver, and 0.22 g/t gold. Throughout its current drilling program, the company has continued to intersect both the Upper and Lower mineralized zones. Higher copper values in both the lower and upper zones in drill hole BR-07-28 may represent primary metal zonation.

In the Wollaston Domain, Wildcat Exploration Ltd. continued its surface exploration program on the Foster River project, including the Sito Lake showings, and identified several new zinc-lead-silver anomalies through a large Mobile Metal Ions (MMI) soil geochemical survey. Wildcat hopes to discover economic Broken Hill-type zinc-lead-silver mineralization on the property. The property contains five lead-zinc showings and copper and silver showings.

In March, Golden Arch Resources reached an agreement to acquire up to an 80% interest in the Wakefield lakes zinc prospect in the Wollaston Domain, located about 250 km north northeast of La Ronge. The project covers six mineral claims and includes the George Lake zinc deposit with a historical published resource (non-43-101-compliant) of 2.9 Mt at 3.67% zinc and 0.53% lead using a 2% zinc cut-off. The company announced in October that it had received permitting from the Saskatchewan government for its planned exploration program, which will include approximately 22 km of road to access drill pad locations and 1220 m of NQ diamond drilling.

Mantis Mineral Corporation signed a Letter of Agreement with Uravan Minerals to earn a 60% interest in the Rottenstone property through \$10 million in exploration expenditures. This property in the central Rottenstone Domain includes the old Rottenstone mine which, between 1965 and 1969, produced 26 057 t of ore that averaged 3.28% nickel, 1.83% copper, and 9.63 g/t platinum group metals plus gold. This bodes well for a renewal of exploration in this area in 2008.

Pure Nickel Inc. is now 100% owner of the Fond du Lac property in the Tantato Domain, which includes the norite-hosted Axis and Currie lakes deposits. Published historic resources (non-43-101-compliant) are 3 402 000 t grading 0.60% copper and 0.60% nickel, and 47 536 t grading 0.79% nickel, respectively. On August 14, 2007, Pure Nickel commenced trading on the TSX (symbol "NIC"). Pure Nickel also undertook drilling, which established that the east-west trending Rea Lake nickel-copper sulphide horizon has a strike length of at least 3 km and a shallow 25-40° southerly dip. The best intersection was 41.4 m of 0.12% nickel and 0.11% copper in hole RL-PNI-07-15. Elsewhere in the area, Strongbow Exploration took out several new mineral dispositions in early 2007 in the Dodge and Tantato domains that cover nine known nickel showings.

Industrial Minerals

It is estimated that about \$21.1 million will be spent on exploring for industrial minerals in Saskatchewan in 2007. Although most of these expenditures will be focused on potash, exploration for kaolin and rare earth elements will also be undertaken.

POTASH

After 25 years of potash exploration inactivity, Saskatchewan is now in the midst of a staking rush. Prior to 2005, there were only 11 potash dispositions (leases) totaling 509 794 ha. As of November 1, there were 51 active potash dispositions (permits and leases) totaling 1 385 772 ha of land. There were also an additional 1 681 632 ha of land awaiting disposition approval. Aside from the three current producers, there are now 11 different companies involved in potash exploration in Saskatchewan. There are three projects in advanced stages of exploration.

The Saturn project is a joint venture between BHP Billiton (75%) and a wholly owned subsidiary of Anglo Minerals Ltd., Prairie Potash Corp. (25%). The Saturn project area is located approximately 20 km east of the PotashCorp's Lanigan mine. By mid-2007, the joint venture had completed two

NI 43-101 technical reports and a 3D seismic survey on the area. Indicated and inferred resources have been determined to be 479 Mt and 981 Mt, respectively.

Athabasca Potash Inc. holds a 100% interest in the approximately 30 000-ha Burr project, located 107 km east of Saskatoon, adjacent to PotashCorp's Lanigan potash mine. In 2007, Athabasca Potash drilled five test wells into the centre of the property to explore mineralization in areas identified during a 2006 2D seismic survey. Athabasca Potash is currently conducting a 3D seismic survey and recently completed an NI 43-101-compliant technical report. The company has outlined an inferred mineral resource of 73.4 Mt.

Potash One Inc. (formerly ISX Resources) is working towards acquiring 100% ownership of the claims hosting the Legacy project, which it has optioned from Invictus Minerals Corp. The Legacy project area comprises nearly 40 000 ha and is located 80 km northwest of Regina, adjacent to the Belle Plaine potash solution mine. Potash One is currently conducting a 3D seismic survey and has completed an NI 43-101-compliant technical report that outlined indicated and inferred resources of 58 Mt and 570 Mt, respectively.

OTHER INDUSTRIAL MINERALS

Whitemud Resources Inc. is developing the Gollier Creek kaolin deposit with the intent of producing meta-kaolin for use as a cement substitute in concrete mixtures. Concrete made with meta-kaolin has been shown to have greater strength, durability, and resistance to chemical attack than traditional cements. Construction of Whitemud's \$47.8 million meta-kaolin processing plant is nearly complete. The company has begun mining the Gollier Creek kaolin deposit and is stockpiling ore for the anticipated commissioning of the plant in early 2008. It is estimated that the plant will be able to produce 175 000 t of meta-kaolin annually, with room to quadruple current production rates if warranted by industry demands. Whitemud completed a 68-drill-hole exploration program in 2007 to test high-potential kaolin targets in the vicinity of the company's Gollier Creek mine. Results of the drilling prompted Whitemud to stake an additional 3947 ha to bring its total mineral holdings in the area up to 11 433 ha. Whitemud has proven reserves of 52.9 Mt of ore and total measured and indicated resources of 96.4 Mt. Whitemud conservatively estimates a mine life of approximately 25 years.

North of Uranium City, Great Western Minerals Group Ltd. continued work on its Hoidas Lake rare earth element project with a winter program comprising 3700 m of drilling. This program was done to expand and upgrade the resource estimate in the down-dip extension of the JAK zone, to obtain 15 t of unweathered material for pilot plant testing, and to obtain reference material for geotechnical testing. In January 2007, Great Western Minerals Group released an update of the original NI 43-101-compliant resource estimate for the JAK zone. The new estimate, based on 84 core holes and a 1.5% total rare earth elements (REE) plus yttrium (TREE + Y) cut-off grade, increased the measured and indicated resource by 108% to 1 150 000 t from 553 000 t, with a slight increase in grade to 2.362% TREE + Y from 2.341% TREE + Y. Wardrop Engineering conducted a Preliminary Economic Assessment of the property and concluded that, based on a 500-t/d mining operation, Great Western Minerals Group could produce 3000-5000 t of total rare earth oxides per year. This output would represent about 10% of the U.S. demand for REE, a market estimated to be worth US\$1 billion annually.

The Bow River Coal project, encompassing 9600 ha, is located west of Lac La Ronge, about 21 km south of the town of La Ronge. Previous operators identified an 11-km-long, 4.5- to 6.5-km-wide field containing 88.8 Mt of shallow lignite A coal that is suitable for thermal power generation. Recent drilling by Santoy has revealed these originally identified beds are substantially thicker and of apparently better rank coal than initially indicated. The higher rank coal is now being classified as sub-bituminous A, with some material classified as a high-volatile bituminous C. Calorific values range from 13 796 to 21 915 kJ/kg. The average depth to the main coal seam was approximately 30.5 m. Santoy plans to conduct further drilling to support an NI 43-101-compliant resource calculation and to better define geotechnical parameters.

Mineral Production

In 2006, commodities produced from Saskatchewan's 28 mineral operations included potash, salt, coal, uranium, gold, silver, copper, zinc, sodium sulphate, silica sand, clay, and bentonite. This production generated \$3.16 billion in sales. In 2007, the value of sales is expected to be significantly higher due largely to the increased demand for potash, but also to higher prices for the province's other mineral commodities. Saskatchewan remained the global leader in potash and uranium production, contributing approximately one third of the world's supply of potash and one quarter of the world's uranium in 2006.

Industrial Minerals

Industrial minerals are a substantial component of the non-renewable resource sector in Saskatchewan and have consistently accounted for between 20% and 50% (and rarely up to 80%) of the gross value of provincial mineral production during the past 30 years. Not including coal, the four major products are potash, salt, sodium sulphate, and aggregate, with minor production in structural clay, silica sand, clinker (a naturally fired brick made from mudstone), and bentonite. The total value of industrial mineral production in 2006 was \$2.48 billion, down from \$2.7 billion in 2005, due mainly to decreases in potash production and sales.

POTASH

In 2006, the value of Saskatchewan's potash sales was \$2.2 billion, which accounted for about 70% of the value of Saskatchewan mineral sales and one third of global production. Potash production from the province's eight underground operations and two solution mines set an all-time high in 2005 at 16.7 Mt of potassium chloride, but fell in 2006 to 13.33 Mt of potassium chloride due to protracted negotiations with key Asian markets. Production and sales in 2007 are expected to meet or exceed previous record levels. With global potash demand forecast to increase at a rate of 3-4% annually, Saskatchewan's three potash producers (PotashCorp., The Mosaic Company, and Agrium Inc.) have responded by announcing upgrades to their current production facilities. Through recently completed and planned expansions, the producers will have spent a collective \$3.55 billion to increase Saskatchewan's annual production capacity to 28.8 Mt of potassium chloride by 2012. This represents a 40% increase over 2004 production capabilities.

Uranium

Uranium mining and milling continued at three operations throughout 2007. These include the Eagle Point mine with ore processed at the Rabbit Lake mill, the McArthur River mine with ore processed at the Key Lake mill, and the McClean Lake mine with stockpiled and mined ore processed at the Jeb mill. Industry forecasts uranium production for the year to total 24.5 million lb of U_3O_8 , slightly lower than the 25.6 million lb U_3O_8 produced in 2006. Construction at Cigar Lake has been hampered by two separate floods, but remediation of the mine is currently under way. Global uranium industry leaders Cameco and AREVA operate all of the aforementioned mines and processing facilities.

MCARTHUR RIVER MINE/KEY LAKE MILL

Key Lake Mill: Cameco, operator (83.333%), and AREVA (16.667%).

McArthur River Mine: Cameco, operator (69.805%), and AREVA (30.195%).

McArthur River is the largest high-grade uranium deposit in the world with proven and probable reserves at the end of 2006 of 367 million lb U_3O_8 at an average grade of 20.55% U_3O_8 . Grades in the orebody reach 70% U_3O_8 locally, and composite grades of 30% U_3O_8 over several metres in thickness are common. Uranium ore is structurally controlled by the P2N fault, which dips 45° to

60° to the southeast and has a 70-m average vertical offset of the Athabasca Group unconformity. Ore is hosted within Athabasca Group sandstone and basement pelitic gneiss of the Wollaston Supergroup.

In 2006, the McArthur River/Key Lake operation produced its licensed production capacity of 18.7 million lb U_3O_8 . Production was again expected to reach capacity in 2007. Cameco has applied for an increase in annual licensed capacity at the Key Lake mill to 22 million lb from the current 18.7 million lb U_3O_8 .

RABBIT LAKE-EAGLE POINT MINE

Cameco, operator (100%).

Production from the Eagle Point mine was 4.0 million lb U_3O_8 in 2007, down from 5.1 million lb in 2006. The Rabbit Lake facility is now the longest-running uranium mining-milling operation in Saskatchewan. Reserves as of December 31, 2006, were 19 million lb U_3O_8 at 1.18%. This ore is targeted to feed the mill facility until the start-up of the Cigar Lake mine.

MCCLEAN LAKE

AREVA, operator (70%), Denison (22.5%), and OURD (Canada) Co. Ltd. (7.5%).

In 2006, the McClean Lake operation produced 1.8 million lb U_3O_8 from Sue A ore and newly mined Sue E ore. As of December 2006, reserves, including both stockpiled and *in situ* ore, were 10.68 million lb U_3O_8 with an average grade of 0.8%. Resource estimates for a variety of small deposits on the McClean site are 23.6 million lb U_3O_8 at 1.20% U_3O_8 .

CIGAR LAKE

Cameco, operator (50.025%), AREVA (37.100%), Idemitsu Uranium Exploration Canada (7.875%), and TEPCO Resources Inc. (5.0%).

Cigar Lake is the world's second largest high-grade uranium deposit with total proven and probable reserves of 226.3 million lb U_3O_8 at an average grade of 20.67% U_3O_8 . Total measured and indicated resources are 6.6 million lb U_3O_8 at 4.86% and inferred resources are 118.2 million lb U_3O_8 at an average grade of 16.92% U_3O_8 . In December 2004, the Canadian Nuclear Safety Commission granted a full construction licence. Construction began on January 1, 2005, and was expected to take 27 months. In early April 2006, water inflow from a drill hole flooded the second shaft, which is used for underground ventilation, and set back the mine start-up date. A second influx of water in late October 2006 flooded the mine's underground workings. Phase 1 of remediation involved drilling holes into the area of the inflow into which concrete would be pumped. Subsequent phases were to include dewatering of the mine, ground freezing of the inflow area, restoration of the underground workings, and, finally, resuming the push towards production. Flood remediation costs were expected to be over \$90 million. Once production commences, it will be ramped up over a period of three years before full production levels of 18 million lb/y U_3O_8 are reached. Currently, the target date for production is 2011.

Gold

Claude's 100%-owned Seabee mine, located about 120 km north-northeast of LaRonge, in the central Glennie Domain, remained Saskatchewan's only producing gold mine in 2007. Cumulative production from Seabee and bulk sampling from the nearby Santoy 7 satellite deposit was 32 157 oz of gold over the first three quarters of 2007. Currently, the Seabee deposit is estimated to have total proven and probable gold reserves of 984 200 t at a grade of 6.67 g/t, with an additional inferred

gold resource of 1 293 300 t at a grade of 8.96 g/t. In the short term, if justified by deep drilling results, the focus at the Seabee mine will be deepening of the shaft to 1000 m, as well as a mill expansion from its present 800-t/d capacity to a proposed 1100 t/d.

Base Metals

Saskatchewan base-metals production in 2006 was from a limited amount of stockpiled Konuto Lake copper and zinc ore. Silver was a by-product of this production. There was no base-metals production in 2007.

2.9 ALBERTA¹⁹

Introduction

Mineral exploration activity in Alberta in 2007 was focused mainly on the search for diamonds and uranium. To date, numerous kimberlite pipes have been discovered in the province, and the elevated price of uranium has increased exploration activity in the Athabasca Basin and southern Alberta. Exploration activity has also been occurring for magnetite, iron, and other base metals. Several companies are bringing their properties to advanced stages of exploration. Statistics on claims staked and assessment reports filed are presented in **Table 14**.

This report is intended to provide a general overview of the main focus of exploration activity in Alberta. It is not intended to be an exhaustive discussion of all exploration activity, and not all companies involved in exploration activity are discussed in this report.

Diamonds

Buffalo Head Hills Kimberlite Field

The Buffalo Head Hills kimberlite field consists of 38 kimberlitic occurrences discovered between 1997 and 2003 by Ashton Mining of Canada Inc. In June 2007, Diamondex Resources Ltd. and Shore Gold Inc., with Diamondex appointed operator, announced the acquisition of the interest of Ashton Mining of Canada Inc. (now Stornoway Diamond Corporation) in the Buffalo Hills project located in north-central Alberta for a total consideration of \$17.5 million.

Diamondex recently announced that it had reached an agreement with the Loon River First Nation to explore for diamonds on Loon River First Nation reserve lands. There has been no indication of what Diamondex intends to do with the February 2007 bulk samples from the K6, K14, and K91 kimberlites completed by Ashton/Stornoway. Kimberlite K14 initially yielded 12 carats per hundred tonnes (ct/ht) from a 479-t bulk sample and K91 yielded 13 ct/ht from a 36-t sample.

¹⁹ The Alberta review of activities was prepared by staff of the Alberta Geological Survey (John Jamieson, Roy Eccles, Tanya Matveeva, and Chris Crocq). For further information, the reader should refer to the Alberta Geological Survey web site at www.ags.gov.ab.ca.

TABLE 14. CLAIMS STAKED AND ASSESSMENT WORK FILED IN ALBERTA, 2002-07

Activity	2002	2003	2004	2005	2006	2007
Claims staked (permits applied for)						
Number of applications (no.) (1)	522	322	533	577	482	445
Total area (Mha) (2)	4.1	2.9	4.7	5.1	3.4	3.9
Permits in good standing						
Number of agreements (no.)	1 409	1 276	866	1 124	1275	1 513
Active hectares (Mha)	11.2	10.2	6.3	8.2	9.6	11.4
Mineral assessment reports filed						
Number of reports (no.)	14	10	24	10	34	29
Number of permits represented (no.)	203	44	184	40	291	397
Hectares represented (Mha)	1.4	0.2	1.2	0.2	1.8	2.8
Expenditures filed (\$ millions)	11.8	0.6	0.9	0.7	6.5	7.6

Sources: Alberta Geological Survey; Alberta Energy and Utilities Board.
Mha Millions of hectares.

(1) Includes both successful and withdrawn permit and lease applications (permits are predominant). (2) Includes hectares requested to take from permit to lease.

Grizzly Diamonds Ltd., which currently holds diamond properties in the Buffalo Head Hills, Birch Mountains, and Pelican Mountain areas of Alberta totaling over three million acres, ground-checked priority anomalies identified from an airborne geophysical survey and identified two high-priority drill targets on its Buffalo Head Hills Grand Cub Aidan property.

Finally, Great Western Diamond Corp. acquired the Utikuma West and Peerless Lake properties on which it collected 134 and 90 till samples, respectively. The company bases its interest in the area on the proximity to the diamondiferous Buffalo Head Hills field; on Alberta Geological Survey (AGS) kimberlite-indicator mineral surveys that reported G9 garnet, eclogitic garnet and olivine on the property; and on the presence of drillable geophysical targets with signatures similar to those shown by previously drilled kimberlites in the main part of the Buffalo Head Hills field.

Birch Mountains Kimberlite Field

In northeastern Alberta, the Birch Mountain kimberlite field consists of nine kimberlites discovered by Kennecott Canada Exploration Inc. and New Blue Ribbon Resources Inc. between 1998 and 2002. During January and February 2007, Grizzly Diamonds Ltd. collected a 10.2-t mini-bulk sample from the Legend kimberlite (Birch Mountains field) via 13 drill holes. During May 2007, the sample was processed at the DeBeers Canada dense media separation plant facility in Grande Prairie, Alberta. In total, three diamonds were recovered from 168.35 kg of drill core, including a colourless, included, twinned octahedron (2.1 mm x 1.58 mm x 1.46 mm). These results correlate with historic results reported by Kennecott Canada.

Other Diamond Activity

In the Calling Lake-Pelican Mountains area of northeast-central Alberta, Grizzly Diamonds Ltd. and partner Stornoway Diamond Corporation have completed anomaly ground checks on the Call of the Wild diamond property. Of the 47 priority magnetic targets selected for follow-up exploration from airborne magnetic data, 19 remain a priority for ground geophysical surveying and sampling. In addition, Great Western Diamond Corp. collected 158 till samples on its La Biche and Calling Card properties located 10 km northeast and 40 km northwest of Calling Lake, respectively.

In the Peace River-Buffalo Head Hills area, Star Uranium Corp. reported that microprobe results from 29 till and stream sediment samples are dominated by kimberlitic olivine grains of similar geochemistry to those associated with the Buffalo Head Hills kimberlite bodies located 70 km to the northeast. Microprobe analysis also confirms the presence of numerous G9 and rare G10 garnet. The company reports that the indicator-mineral anomalies appear to define a geographically restricted area of at least two populations and are directly down ice of a cluster of geophysical targets; future drilling is anticipated on the anomaly clusters and other priority targets.

Uranium

Southern Alberta

At the Whiskey Gap property, International Ranger Corp. reported results of both water sampling and drilling programs. A total of 26 samples from water wells were collected and assayed for radon, uranium, and sulphate. Based on the location of radon anomalies (up to 5000 picocuries/litre or 185 becquerels/litre), two drilling programs were planned and carried out. A total of 40 drill holes were drilled in four target areas to a maximum depth of 150 m. The strongest radioactivity (up to 640 API units) and the best uranium mineralization were encountered during a diamond drilling program on Thomson Ranch. Here a one-foot sample returned 132 ppm uranium. Uranium anomalies were associated with anomalous values in copper, arsenic, molybdenum, and selenium. Based on the drilling results, the company plans to continue drilling in neighbouring areas in September 2007.

At the Alberta Sun project, Firestone Ventures and Black Hawk Exploration report a 2384-line-km electromagnetic and magnetic airborne survey over four priority areas near Fort McLeod. TerraNotes Ltd. of Edmonton is carrying out initial analysis of the survey to be followed by modeling of the dataset, which should delineate high-priority areas for drilling.

Northeastern Alberta

Red Dragon Resources drilled 1903 m in eight relatively shallow high-priority targets of its Rea uranium project in 2007. The project covers 446 330 acres and surrounds AREVA's Maybelle River uranium deposit.

CanAlaska Uranium Ltd. completed a preliminary seismic survey of its Alberta project area (80 km x 20 km). The survey crews have also completed detailed, shallow single-channel seismic surveys in the broad area surrounding the uranium mineralization at Stewart Island and have identified a series of major structural breaks and offsets in this area. Deep seismic survey data are now being collected to finalize winter drill targets. Data from two MEGATEM EM airborne surveys show multiple geophysical features that appear anomalous to surrounding data sets.

At the Bonny Fault uranium property, North American Gem Inc. will investigate zones of historic, high-grade surface uranium mineralization, as well as 41 of the highest-priority airborne radiometric uranium targets. To date, 276 linear and point-source uranium anomalies have been identified on the Terraquest airborne geophysical block. Many of these uranium anomalies are coincident with either foliation-parallel or major cross-cutting structures. Approximately 15% have been categorized as very high-priority targets, characterized by the highest uranium responses coincident with apparent structural controls. These targets will include 10 targets that are located on or near the Bonny fault or sub-parallel faults, which may have been conduits for uranium-bearing fluids from the now-eroded Athabasca sandstones that once overlaid the area.

Fission Energy Corp. reports that several correlations of magnetic and electromagnetic data were found along with several basement-hosted conductors identified throughout its Athabasca South Shore property. Several potential kimberlite targets were also identified from a GEOTEM survey. Follow-up ground work over targets identified from the airborne surveys was completed during the first few months of 2007. Previous historic exploration includes drill holes that encountered significant mineralization; measured uranium was 108 ppm U_3O_8 over a short interval. Several other holes also encountered 20-40 ppm U_3O_8 over short intervals.

Iron

In April 2007, General Properties Ltd. completed the acquisition of Clear Hills Iron Ltd. and its 213 206 ha of land on 32 metallic and industrial mineral permits in the Clear Hills area of northwestern Alberta. The company conducted a limited drilling and sampling program on the North Rambling Creek prospect. Results include 15 feet of core grading 28.74% Fe_2O_3 and 26.8 feet grading 32.8% Fe_2O_3 . Reconnaissance surface sampling yielded samples that assayed at 44.5% and 46.8% Fe_2O_3 . The total iron reserves within the Clear Hills are estimated at over 1 billion tons grading 32-35% iron.

Magnetite

In southwestern Alberta, Micrex Development Corp. continues the development of its Burmis magnetite project. Currently, an application is being prepared for a 20 000 tons-per-year operation over the first two years, followed by 40 000 tons per year for the remainder of the mine life, which is expected to be 10 years. The ore contains 30-60% magnetite. Additional hydrothermal-sourced titanium and zirconium minerals may be present in economic quantities as well. The permitting process for the Burmis quarry is ongoing, including discussions with the local communities. Exploration continues in the areas surrounding the Burmis property for other hydrothermal occurrences.

Lead and Zinc

Star Uranium Corp. has reached an agreement with Ivany Mining Inc. whereby Ivany Mining will earn a 100% interest in Star Uranium's Zama Lake property in northwestern Alberta. This agreement is in response to Star Uranium's goal of becoming a pure uranium company. The Zama Lake property was initially developed as a kimberlite prospect. However, bulk till sampling by the Geological Survey of Canada (Open File 5121) revealed anomalous concentrations of sphalerite and galena grains within the coarse sand fraction. The concentration of sphalerite grains is the highest ever detected in an exploration till sample (>1000 grains in a 20-kg sample) and the mineral grain size, and compaction and composition of the till, suggest that the source may be within the 93 242-ha property. The discovery indicates the potential for Mississippi Valley-type lead-zinc mineralization, similar to the world-class Pine Point deposit located 330 km northeast in the Northwest Territories that was mined by Cominco between 1964 and 1998 and that is still an area of active exploration.

The diamond rights to the Zama Lake property will be retained by Star Uranium and will be included with the company's other diamond properties in a proposed new company, Star Diamond Corp.

Titanium and Zirconium

Titanium Corporation is continuing its development of the recovery of titanium and zirconium minerals from oil sands operations in the Fort McMurray area of northeastern Alberta. The oil sands may contain the largest deposit of titanium and zirconium minerals in the world. Titanium Corporation is currently operating a pilot research facility and is testing on site with portable processing facilities. Titanium Corporation is also developing technologies to recover a portion of hydrocarbons from oil sands tailings.

2.10 BRITISH COLUMBIA²⁰

Summary and Outlook

The forecast of \$415 million spent on exploring for minerals in British Columbia marks the highest annual expenditure ever. As shown in **Table 15**, spending has increase every year for the past six years. The \$415 million is an extraordinary increase of over 14 times the low-point expenditure of \$29 million in 2001.

Over the course of the past six-year period, it is now well known that the higher amounts of exploration spending were, and are, a worldwide reality driven to a large extent by the rapid rise in metal and coal prices. Interestingly, British Columbia's 14-times increase considerably exceeds the world's 3.5 times increase and Canada's 4.5 times increase over the same six-year period. This increase over world and national spending reflects well on the province's exploration and mining policies and on its industry-friendly regulatory regime. In addition to the B.C. Ministry of Energy, Mines and Petroleum Resources, British Columbia has established a separate non-profit organization, Geoscience BC, that is dedicated to building up the geoscience knowledge base of the province for the benefit of the exploration and mining industry.

A further indication of the province's strong exploration economy is indicated in **Figure 22**. For three years now, British Columbia's share of Canadian exploration spending has exceeded 15% and the province has ranked number two amongst all the other provinces and territories.

Factors such as increasing Asian demand for minerals, a buoyant world economy, and challenges in meeting mineral demands, such as labour shortages and transportation bottlenecks, have boosted mineral prices and exploration spending worldwide. There is now some concern that world economic growth may begin to unwind in the coming year. Even if the world economy regresses to a position of slower growth or even a mild recession, British Columbia anticipates continued strong exploration spending in 2008. The coming year's spending is supported by capital market financings that are already in place and many companies are committed to their 2008 exploration programs. Based on the good exploration results achieved to date, these companies are excited about advancing their exploration projects through more detailed phases of project appraisal. Over 100 of these projects are listed in **Table 16**.

²⁰ The British Columbia review of activities was prepared by Jim Lewis and Scott Lunney. For more information, the reader is invited to contact Mr. Lewis (by telephone at 250-952-0521 or by e-mail at jim.lewis@gov.bc.ca) or Mr. Lunney (by telephone at 250-952-0447 or by e-mail at scott.lunney@gov.bc.ca).

TABLE 15. EXPLORATION EXPENDITURES IN BRITISH COLUMBIA, 1997-2007

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 (f)
Spending (\$ millions)	115	55	41	36	29	39	63	152	218	344	415
Percent change (%)	+10	-53	-24	-13	-19	+35	+59	+143	+44	+58	+21

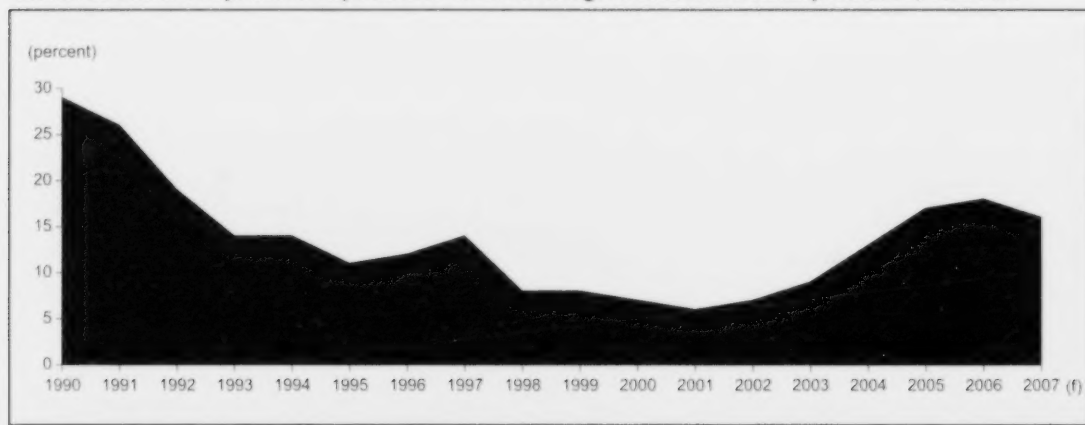
Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

(f) Forecast of intentions.

(1) Based on British Columbia's Ministry of Energy, Mines and Petroleum Resources survey of exploration which, by memorandum of understanding with Natural Resources Canada, is temporarily used as early estimates.

Notes: All figures include exploration and deposit appraisal (and exclude mine complex development). In addition to field work and overhead expenditures, statistics include engineering, economic and feasibility studies, environmental and land access spending. All statistics (except 2007 - see note 1) are referenced from the official federal-provincial/territorial Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures. The official statistics from this survey are the source for Statistics Canada's National Accounts.

Figure 22
British Columbia's Exploration Expenditures as a Percentage of Canada's Total Expenditures, 1990-2007



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

(f) Forecast of intentions.

Government Initiatives

Mining is an important industry within British Columbia's economy. Over 10 700 people are directly employed in mining and an additional 2000 in exploration provide varying levels of support to more than 50 communities. Tax revenues exceeded \$600 million in 2006 and the value of mine production in 2007 is estimated at \$5.9 billion. Every year, the provincial government initiates new policies and programs to ensure the long-term health and growth of this industry sector. Some of the initiatives taken in 2007 are as follows.

Ministry of Energy, Mines and Petroleum Resources Highlights

TRADE MISSION

- Completed an international trade investment mission, led by the Minister of State for Mining, to China, Japan, and South Korea. The joint industry-government mission's purpose was to promote British Columbia's mineral resources and encourage new financial investment in the province's mineral exploration and mining industry.

ECONOMIC INITIATIVES

- Providing an additional \$3 million over three years to expand the province's geological mapping co-op program, which will increase exploration activity and future mine developments.
- Participating in the development of the Major Project Management Office, which will bring the federal agencies together in one coordinated process to help streamline the permitting process.
- Successfully increased and maintained a high level of staking activity in British Columbia for three years running through *Mineral Titles Online*. Clients have benefited from Internet map selection, which eliminates the physical effort and costs involved in physical claim staking.
- Continued infrastructure development work focused on exploration and mining access roads, power-grid extensions, and collaboration with the federal government and rail and port authorities to ensure that British Columbia remains the Pacific Gateway for mineral exports.

TABLE 16. MINE DEVELOPMENT PROJECTS, NEW MINES, AND ADVANCED-PHASE EXPLORATION PROJECTS IN BRITISH COLUMBIA, 2007

Sector	Exploration Project/Operation	Company/Operator	Commodity	Deposit Setting
MINE STARTS AND RE-STARTS (WITHIN LAST THREE YEARS)				
Aggregate	Orca Sand and Gravel	Polaris Minerals Corporation	Sand and gravel	Construction aggregate
Aggregate	Swamp Point	Ascot Resources Ltd.	Sand and gravel	Construction aggregate
Coal	Brule Mine	Western Canadian Coal Corp.	Coal-PCI	Coal
Coal	Trend	Peace River Coal LP	Coal met	Coal
Coal	Wolverine Coal Mine	Western Canadian Coal Corp.	Coal	Coal
IM	Decor	Pacific Bentonite Ltd.	Burnt shale	Industrial mineral
Metal	Max Molybdenum	Roca Mines Inc.	Mo	Porphyry
Metal	Mount Polley Mine	Imperial Metals Corporation	Au, Cu	Porphyry
Metal	QR	Cross Lake Minerals Ltd.	Au	Skarn
PROPOSED MINE DEVELOPMENTS - COMPLETED OR IN MINE-PERMITTING PROCESS				
Aggregate	Bear River Gravel	Glacier Aggregates Inc.	Sand and gravel	Construction aggregate
Aggregate	Eagle Rock	Polaris Minerals Corporation	Crushed rock	Construction aggregate
Aggregate	Hills Bar Aggregate Quarry	Qualark Resources Inc.	Crushed rock, Au	Construction aggregate
Coal	Gething Coal Project	Canadian Dethua Intl Mines Group Inc.	Coal met	Coal
Coal	Hermann	Western Canadian Coal Corp.	Coal-PCI	Coal
Coal	Horizon	Peace River Coal LP	Coal	Coal
Coal	Lodgepole	Cline Mining Corporation	Coal	Coal
Coal	Mount Klappan	Fortune Minerals Limited	Coal-anthracite	Coal
Coal	Roman Coal Mine	Peace River Coal LP	Coal	Coal
IM	Giscome Quarry and Lime	Graymont Western Canada Inc.	Lime	Industrial mineral
IM	Sechelt Carbonate	Pan Pacific Aggregates Ltd.	Limestone/dolomite	Carbonate rock
Metal	Cariboo Gold Quartz / Bonanza	International Wayside Gold Mines Ltd.	Au	Vein-mesothermal
Metal	Cogburn	North Pacific Alloys Limited	Magnesium, PGE	Magmatic PGE
Metal	Davidson	Thompson Creek Metals Company Inc.	Mo	Porphyry
Metal	Galore Creek	NovaGold Resources Inc.	Cu, Au, Ag	Porphyry
Metal	Kemess North	Northgate Minerals Corporation	Cu, Au	Porphyry
Metal	Kutcho Creek	Western Keltic Mines Inc.	Cu, Zn, Ag, Au	Volcanogenic massive sulphide
Metal	Morrison/Hearne Hill	Pacific Booker Minerals Inc.	Cu, Au	Porphyry
Metal	Mount Milligan	Terrane Metals Corp.	Cu, Au	Porphyry
Metal	Prosperity	Taseko Mines Limited	Cu, Au	Porphyry
Metal	Red Chris	Imperial Metals Corporation	Cu, Au	Porphyry
Metal	Ruby Creek Molybdenum	Adanac Molybdenum Corporation	Mo	Porphyry
Metal	Schaft Creek	Copper Fox Metals Inc.	Au, Ag, Cu, Mo	Porphyry
Metal	Sustut Copper	Northgate Minerals Corporation	Cu, Ag	Redbed
Metal	Tulsequah Chief	Redfern Resources Ltd.	Cu, Au, Zn, Ag, Pb	Volcanogenic massive sulphide
SIGNIFICANT EXPLORATION COMPLETED - PRE-FEASIBILITY STAGE OR BETTER				
Coal	Babcock (Quntette)	Elk Valley Coal Corporation	Coal met	Coal
Coal	Basin	Compliance Energy Corporation	Coal thermal	Coal
Coal	Belcourt / Saxon	Peace River Coal LP	Coal-PCI	Coal
Coal	Bingay Creek	Hillsborough Resources Limited	Coal	Coal
Coal	Lossan	Cline Mining Corporation	Coal	Coal
Coal	Sukunka	Talisman Energy Inc.	Coal-PCI	Coal
IM	Venty and Fir	Commerce Resources Corp.	Tantalum, niobium	Industrial mineral
Metal	3Ts	Silver Quest Resources Ltd.	Au, Ag	Vein-epithermal
Metal	Bralorne	Bralorne Gold Mines Ltd.	Au	Vein-mesothermal
Metal	Bronson Slope	Skyline Gold Corporation	Cu, Au, Ag, Mo	Porphyry
Metal	Copper Canyon	Copper Canyon Resources Ltd.	Cu, Au, Ag	Vein-mesothermal
Metal	Doc	Carlisle Goldfields Limited	Au, Ag	Vein-epithermal
Metal	E & L	Silver Standard Resources Inc.	Cu, Ni	Magmatic
Metal	Elk/Swash	Almaden Minerals Ltd.	Au	Vein-mesothermal
Metal	Golden Crown	Gold City Industries Ltd.	Au, Cu	Vein-mesothermal
Metal	Granduc	Bell Resources Corporation	Cu	Vein-mesothermal
Metal	Inel	Gulf International Minerals Ltd.	Pb, Zn	Sedimentary exhalative
Metal	J & L (McKinnon Creek)	Merit Mining Corp.	Au, Ag, Cu, Zn, Pb	Sedimentary exhalative
Metal	Johnny Mountain	Skyline Gold Corporation	Cu, Au, Ag	Vein-mesothermal
Metal	Lexington Lonestar	Merit Mining Corp.	Au, Cu	Vein-mesothermal
Metal	New Alton	New Gold Inc.	Cu, Au	Porphyry
Metal	New Polaris	Canarc Resource Corp.	Au	Vein-mesothermal
Metal	Paydirt	Silver Standard Resources Inc.	Au	Porphyry
Metal	Porter Idaho	Teuton Resources Corp.	Ag	Vein-epithermal
Metal	Premier Big Missouri	Boliden	Au, Ag, Zn	Sedimentary exhalative
Metal	Red Mountain	Seabridge Gold Inc.	Au, Ag	Porphyry
Metal	Rock & Roll	Forrest Syndicate	Cu, Au, Ag	Volcanogenic massive sulphide
Metal	Ruddock Creek	Selkirk Metals Corp.	Zn, Pb	Sedimentary exhalative
Metal	Spectrum (Red Dog)	Arkaroola Resources Ltd.	Au	Porphyry
Metal	Stronsay Lead Zinc	Cirque Operating Corporation	Zn, Pb, Ag	Sedimentary exhalative
Metal	Sulphurets Gold/Silver	Silver Standard Resources Inc.	Au, Cu	Porphyry

TABLE 16 (cont'd)

Sector	Exploration Project/Operation	Company/Operator	Commodity	Deposit Setting
SIGNIFICANT EXPLORATION COMPLETED - PRE-FEASIBILITY STAGE OR BETTER (cont'd)				
Metal	Table Mountain	Cusac Gold Mines Ltd.	Au	Vein-mesothermal
Metal	Todd Creek	Geofine Exploration Consultants Ltd.	Au	Vein-epithermal
Metal	Turnagain	Hard Creek Nickel Corporation	Ni	Magmatic
Metal	Vault	Ecstall Mining Corporation	Au	Vein-epithermal
Metal	Willa	International Bethlehem Mining Corp.	Cu, Au	Porphyry
STRONG PRE-FEASIBILITY POTENTIAL AND/OR ATTRACTING LARGE EXPLORATION SPENDING				
Coal	Castle Mountain / Bare Mountain	Elk Valley Coal Corporation	Coal	Coal
Coal	Falling Creek	Kennecott Exploration	Coal	Coal
Coal	Goodrich (Central South)	First Coal Corporation	Coal	Coal
Coal	Mt. Michael (Line Creek)	Elk Valley Coal Corporation	Coal	Coal
Coal	Pine Pass	Falls Mountain Coal Inc.	Coal	Coal
Coal	Raven	Compliance Energy Corporation	Coal	Coal
Coal	South Cirque	First Coal Corporation	Coal	Coal
Coal	Wheeler Ridge	Elk Valley Coal Corporation	Coal	Coal
IM	Blizzard	Boss Power	U ₃ O ₈	Industrial mineral
Metal	Ajax	Tenajon Resources Corp.	Mo	Porphyry
Metal	Akie	Mantle Resources	Zn, Pb, Ag	Sedimentary exhalative
Metal	Al (Ranch)	Christopher James Gold Corp.	Au	Vein-epithermal
Metal	Ball Creek	Paget Resources Corporation	Cu, Au	Porphyry
Metal	Berg	Terrane Metals Corp.	Cu, Au	Porphyry
Metal	Big Onion	Eagle Peak Resources	Cu, Au	Porphyry
Metal	Blackdome	J Pacific Gold Inc.	Au	Vein-epithermal
Metal	Bodine		Cu, Zn	Volcanogenic massive sulphide
Metal	Carmi (Kettle R.)	Hi Ho Silver Resources Inc.	Mo	Porphyry skarn
Metal	Chilanko	Newmac Resources Inc.	Cu, Au	Porphyry
Metal	Chona/Chica	Amarc Resources Ltd.	Cu, Au	Porphyry
Metal	Coastal	Kenrich-Eskay Mining Corp.	Cu, Ag, Au	Volcanogenic massive sulphide
Metal	Coles Creek	Callinan Mines Ltd.	Cu, Au, Mo	Porphyry
Metal	Copper Creek	Firesteel Resources Inc.	Cu, Au	Porphyry
Metal	Copper Mountain	Copper Mountain Mining Corporation	Au, Ag, Cu	Porphyry
Metal	Corey	Kenrich-Eskay Mining Corp.	Au, Ag, Cu	Volcanogenic massive sulphide
Metal	Craigmont (Betty)	Craigmont Mines/Christopher James Gold Corp.	Cu	Skarn
Metal	Crazy Fox (Anticlimax A)	Newmac Resources Inc.	Mo, tungsten	Porphyry
Metal	Del Norte	Sabina Silver Corporation	Au, Ag	Vein-epithermal
Metal	Eaglehead	Carmax Explorations Limited	Cu, Mo	Porphyry
Metal	Electrum	American Creek Resources Ltd.	Au, Ag	Vein-mesothermal
Metal	Elizabeth	J Pacific Gold Inc.	Au	Vein-mesothermal
Metal	Empire	American Creek Resources Ltd.	Au	Porphyry
Metal	Fiji (Tonga North)	Teuton Resources Corp.	Au	Vein-mesothermal
Metal	Foremore	Roca Mines Inc.	Ag, Au, Cu, Pb, Zn	Volcanogenic massive sulphide
Metal	Fran (St. James)	Yankee Hat Minerals Inc.	Cu, Au	Porphyry
Metal	Getty North	Getty Copper Inc.	Cu	Porphyry
Metal	Giant Copper	Imperial Metals Corporation	Au, Ag, Mo, Cu	Vein-mesothermal
Metal	Golden Eagle	Signet Minerals Inc.	Au	Vein-epithermal
Metal	G South (Anbau Ck.)	Richfield Ventures Corp.	Cu, Ag, Au	Volcanogenic massive sulphide
Metal	Harper Creek	Yellowhead Mining Inc.	Cu, Ag, Au, Zn	Volcanogenic massive sulphide
Metal	Homestake Ridge	Bravo Venture Group	Cu, Ag, Au	Volcanogenic massive sulphide
Metal	Husham (Expo)	Western Copper Corporation	Cu, Au	Porphyry
Metal	Isintok (HED)	Jasper Mining Corporation	Cu, Au, Ag, Mo	Porphyry
Metal	Jersey Emerald	Sultan Minerals Inc.	Cu, Mo	Porphyry
Metal	Kena	Sultan Minerals Inc.	Au	Porphyry
Metal	Kerr Sulphurets	Seabridge Gold Inc.	Cu, Au	Porphyry
Metal	Ketchikan	Copper Belt Resources Inc.	Cu, Au	Porphyry
Metal	Kinaskan (GJ and QC)	Canadian Gold Hunter Corp.	Cu, Au	Porphyry
Metal	Kilyul	Geginformatics Exploration Inc.	Cu, Au	Porphyry
Metal	Kwanika	Serengeti Resources Inc.	Cu, Au, Mo	Porphyry
Metal	Lac La Hache (Aurizon, Ann North)	GWR Resources Inc.	Cu, Au	Porphyry skarn
Metal	LJ	Venturex Explorations Inc./Selkirk Metals Corp.	Ag, Pb, Zn	Porphyry
Metal	Lloyd Nordik	Valley High Ventures Ltd.	Au, Cu	Porphyry
Metal	Lorraine	Eastfield Resources Ltd.	Cu, Au	Porphyry
Metal	Louise Lake	North American Gem Inc.	Cu, Au, Mo, Ag	Porphyry
Metal	Lucky Ship	New Cantech Ventures	Cu, Mo	Porphyry
Metal	Lustdust	Alpha Gold Corporation	Au, Ag, Cu	Skarn-manto
Metal	Manson Creek	Canadian Gold Hunter Corp.	Au	Vein-mesothermal
Metal	Max (Kamad-Homestake)	Amarc Resources Ltd.	Cu, Ag, Au, Zn, Pb	Volcanogenic massive sulphide
Metal	Merry Widow (Old Sport)	Grande Portage Resources Ltd.	Cu, Ag, Au, cobalt	Skarn
Metal	Mineral Creek	Bitterroot Resources Ltd.	Au	Vein-mesothermal
Metal	Mouse Mountain	Richfield Ventures Corp.	Cu, Au	Porphyry
Metal	Moyie	St. Eugene Mining Corporation Limited	Ag, Pb, Zn	Volcanogenic massive sulphide
Metal	Newmont Lake (McLymont)	Romios Gold Resources	Cu, Ag, Au, Mo	Volcanogenic massive sulphide
Metal	Nitli Mountain	Leeward Capital Corp.	Mo	Porphyry
Metal	Panorama Ridge	Goldcliff Resource Corporation	Au	Skarn

TABLE 16 (cont'd)

Sector	Exploration Project/Operation	Company/Operator	Commodity	Deposit Setting
STRONG PRE-FEASIBILITY POTENTIAL AND/OR ATTRACTING LARGE EXPLORATION SPENDING (cont'd)				
Metal	Peak (French)	Grizzly Diamonds	Cu, Ag, Au, Zn, Pb	Volcanogenic massive sulphide
Metal	Pie	Ecstail Mining Corporation	Zn, Pb	Sedimentary exhalative
Metal	Pil	Finlay Minerals Ltd.	Cu, Au, Mo, Ag	Porphyry
Metal	Pine	Cascadero Copper Corporation	Cu, Au	Volcanogenic massive sulphide
Metal	Poly	Geofine Exploration Consultants Ltd.	Cu, Ag, Au, Pb, Zn	Volcanogenic massive sulphide
Metal	Porphyry Pearl	Starfire Minerals	Cu, Au	Volcanogenic massive sulphide
Metal	Prospect Valley	Consolidated Spire Ventures Ltd.	Au, Ag	Vein-epithermal
Metal	Rain	International Bethlehem Mining Corp.	Cu, Ag, Pb, Zn	Volcanogenic massive sulphide
Metal	RDN	Rimfire Minerals Corporation	Au, Ag	Volcanogenic massive sulphide
Metal	Red Bird	Torch River Resources	Mo, rhenium	Porphyry
Metal	Red Hill	Avalon Ventures Ltd.	Cu, Ag, Au, Zn	Volcanogenic massive sulphide
Metal	Redton	Geoinformatics Exploration Inc.	Cu, Au	Porphyry
Metal	ReMac	Redhawk Resources Inc.	Zn, Pb, Ag	Sedimentary exhalative
Metal	Rossland (OK)	West High Yield Resources Inc.	Cu, Ag, Au	Volcanogenic massive sulphide
Metal	Seel	Gold Reach Resources Ltd.	Au, Pb, Ag, Zn	Porphyry
Metal	Seneca	Carat Exploration Inc.	Zn, Pb, Cu	Volcanogenic massive sulphide
Metal	Shan	BCM Resources Corporation	Mo	Porphyry
Metal	Shasta	Sable Resources Ltd.	Au, Ag	Vein-epithermal
Metal	Sickle	Stealth Minerals	Au, Ag, Cu	Vein-epithermal porphyry
Metal	Silver Coin	Pinnacle Mines Ltd./Mountain Boy Minerals Ltd.	Au, Ag, Cu, Pb, Zn	Vein-epithermal
Metal	Skoonka Creek	Strongbow Exploration Inc./Almaden Minerals Ltd.	Au	Vein-epithermal
Metal	Snowfield	Silver Standard Resources Inc.	Au, Mo	Porphyry
Metal	Spanish Mountain	Skygold Ventures Ltd./Wildrose Resources Ltd.	Au	Vein-mesothermal
Metal	Sphinx	Eagle Plains Resources Ltd.	Mo	Porphyry
Metal	Storie	Columbia Yukon Explorations Inc.	Mo	Skarn
Metal	Sullivan Deepes	Stikine Gold Corporation	Pb, Zn, Ag	Sedimentary exhalative
Metal	Summit Lake	Tenajon Resources Corp.	Au	Vein-mesothermal
Metal	Tag	CZM Capital Corp.	Au, Ag	Vein-mesothermal/epithermal
Metal	Tam (Misty)	Commander Resources Ltd.	Au	Skarn
Metal	Taurus II	Cusac Gold Mines Ltd.	Au	Vein-mesothermal
Metal	Tide	American Creek Resources Ltd./Rimfire Minerals Corporation	Au	Skarn/porphyry
Metal	Treaty Creek	Teuton Resources Corp.	Au, Cu	Skarn
Metal	Trident	Aries Resource Corp./Action Minerals Inc.	Cu	Skarn
Metal	Westport	Williams Creek Explorations Ltd.	Au	Skarn
Metal	Williams Gold	Rimfire Minerals Corporation/Arcus Development Group	Au, Cu	Skarn
Metal	Woodjam	Fjordland Exploration Inc.	Cu, Au	Porphyry
Metal	Yellowjacket	Prize Mining Corp.	Au	Vein-mesothermal

Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

Ag Silver; Agg. Construction aggregates project; Au Gold; Ba Barium; Coal-met. Metallurgical coal; Coal-PCI Pulverized coal injection; Cu Copper;

IM Industrial mineral; Mo Molybdenum; Pb Lead; PGE Platinum Group Elements; Zn Zinc.

Notes: The project list was developed from publicly available data and from company contacts up to November 2007. Pre-feasibility stage or better implies that the project has identified inferred reserves and/or measured/indicated reserves, and/or in the case of industrial minerals, that preliminary or more advanced market testing indicates the presence of a marketable mineral resource.

JOBS, TRAINING, AND FIRST NATIONS AND RURAL COMMUNITIES CAPACITY BUILDING

- Taking steps to deal with labour shortages in the mining industry by supporting education and training.
- Supporting the Northwest Community College's School of Exploration and Mining in northwestern British Columbia.
- Investing over \$2.3 million in 2005/06 and 2006/07, and will invest an additional \$25 000 in 2007/08, to expand training for youth from rural and Aboriginal communities to address the labour needs of the mineral exploration and mining industry.
- Contributing a total of \$7.3 million to the Reclamation and Prospecting Program (RAP) in partnership with Smithers Exploration Group, Northwest Community College, and the federal Department of Human Resources and Social Development.
- The Province is actively seeking to increase the participation of First Nations peoples in the mineral exploration and mining industry by supporting programs like the Association for Mineral

Exploration British Columbia's Aboriginal Minerals Training and Employment Program, which is in partnership with the British Columbia Institute of Technology and the Mining Association of British Columbia.

- Supporting the Mineral Resources Education Program to ensure students in the K-12 school system have information about mining and mineral exploration.
- Helping establish the BC Mineral Exploration and Mining Sector Labour Shortage Task Force to develop strategies to meet industry labour demands.
- Establishing a Canada-wide Skills and Capacity Committee to support mines ministers' commitment to look for opportunities between the federal-provincial/territorial governments and industry to address skill shortages.

GEOSCIENCES INITIATIVES

- The province is backing Geoscience BC's initiative for the \$5 million QUEST (Quesnellia Exploration Strategy) project in central British Columbia's Mountain Pine Beetle infestation area to help unlock the province's mineral potential and stimulate new economic activity. This work will be completed in conjunction with the B.C. Geological Survey's many ministry projects and will help industry identify vitally needed mineral deposits, which will help diversify local economies.

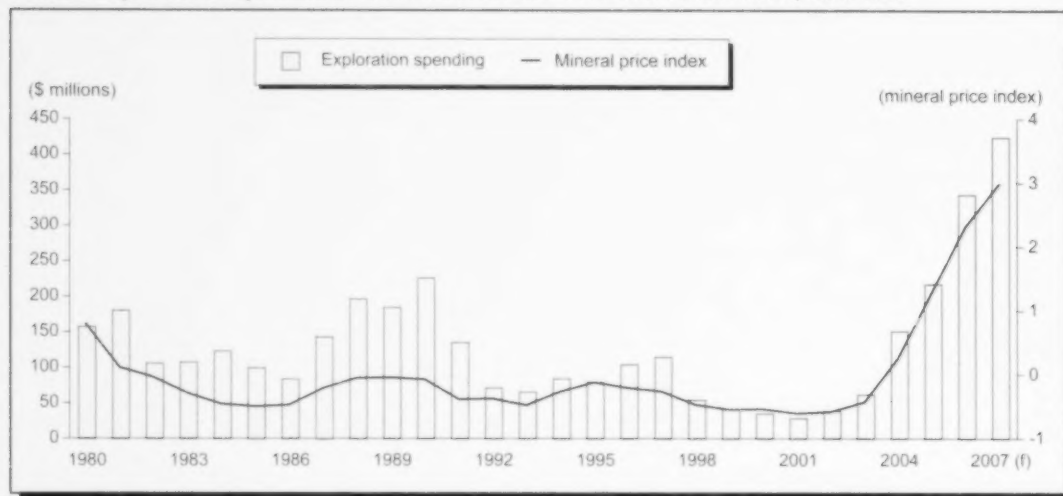
Geoscience BC Highlights

- Launched the \$5 million QUEST project, which targets the prospective rocks of the Quesnel Terrane between Williams Lake and a point north of Mackenzie. The project includes large-scale airborne electromagnetic (EM) and gravity surveys and geochemical surveys. To date, over 700 000 ha have been staked since the project was announced.
- Released major geophysical survey results in the Bonaparte Lake and Jennings River areas (in partnership with Natural Resources Canada), a regional geochemical survey in the South Nechako-Cariboo Basin, a digital geochemical data compilation for the Mountain Pine Beetle area, and two reports on geochemical sampling techniques (see www.geosciencebc.com/s/DataReleases.asp).
- Continued many other geoscience projects in the mountain pine beetle area and throughout the province. These projects include mineral deposit studies, mapping and mineral potential assessments, and remote-sensing applications.
- Initiated work with communities and First Nations, particularly those in the mountain pine beetle affected areas, and announced a new geoscience scholarship program. The first 10 scholarships have now been awarded.

Statistical Trends in British Columbia's Exploration Sector

Over the most recent five or six years, extraordinary increases in mineral prices have accelerated exploration spending. **Figure 23** plots exploration spending in British Columbia against a price index comprised of the seven key minerals that account for over 85% of British Columbia's exploration spending and mine production (i.e., copper, lead, zinc, molybdenum, silver, gold, and metallurgical coal). The figure shows the high coincidence of British Columbia's mineral price index with provincial exploration spending and indicates how escalating commodity prices have driven the strong and persistent growth in exploration spending. The success of new mines resulting from this boost in exploration activity should sustain continued spending long after mineral prices have subsided.

Figure 23
Annual Exploration Expenditures and British Columbia's Mineral Price Index, 1980-2007



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

(f) Forecast.

Note: Exploration expenditures for 2007 are based on a revised forecast of intentions.

Just how extraordinary some of these price increases have been is shown in **Figure 24**. All five prices plotted have more than doubled since 2001, zinc has tripled, copper is up over four times, and molybdenum is up thirteen times. The exceptional and sustained increase in molybdenum price alone has resulted in the opening of the new Max mine and the progression of three more mine development projects to the permitting stage (see Ruby Creek, Davidson, and Shaft Creek in **Table 16**).

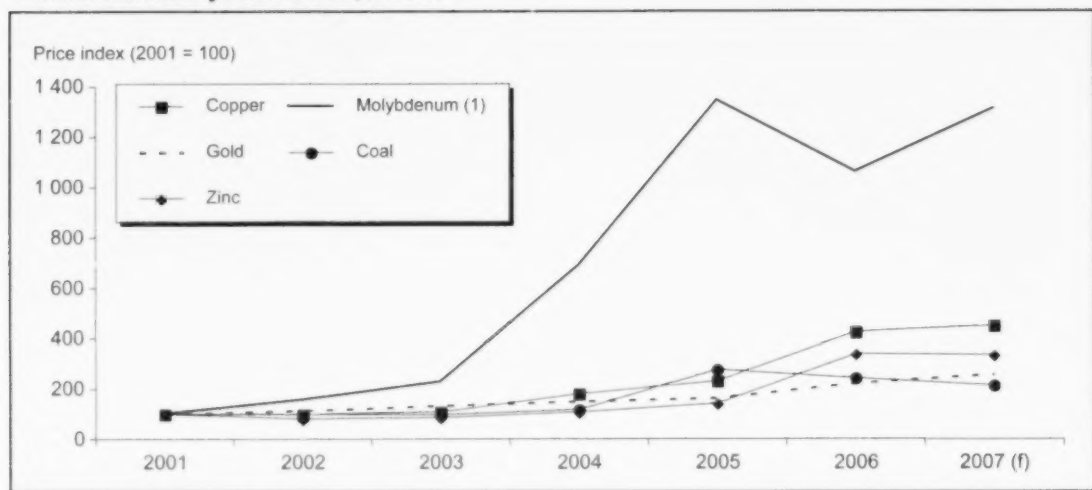
Other exploration indicators, which are plotted in the graphs that follow, provide a broader overview of the strong upward trend in exploration as witnessed in British Columbia in recent years. **Figure 25** shows that as exploration spending continued to escalate in 2006 and 2007, the hectares of land staked and the number of Free Miner Certificates issued have plateaued. This suggests that exploration projects are moving on to more expensive phases of drilling and deposit appraisal, where advanced stages of exploration are increasing relative to grassroots activities.

This is further illustrated in **Figures 26** and **27**, which show that the number of metres drilled in exploration is up by over 50% in 2007 compared to 2006. British Columbia's exploration drilling in each of its five mining regions is shown in **Figure 26**. The much higher total metres drilled in the northeast, northwest, and south-central regions reflect a major focus on appraising metalliferous targets. In comparison, the other two regions show smaller totals; however, the southeast region's drilling is up considerably from 2006 as a result of exploration for coal. In the heavily populated southwest, while companies are drilling some metal and coal properties, there is a substantial amount of exploration and development going into construction aggregate and industrial mineral projects.

In **Figure 27**, the larger gap between the "exploration spending line" and the "metres drilled bar" in 2006 compared with 2007 is further verification of the trend in exploration budgets being increasingly allocated to drilling and more advanced stages of exploration.

British Columbia's Cordilleran geology hosts a wide variety of mineral deposit types; however, the major share of exploration spending is allocated to porphyries, veins, massive sulphides, and coal deposits, as illustrated in **Figure 28**. While coal has maintained high levels of exploration, the other three metalliferous deposit types continue to attract ever-increasing exploration dollars.

Figure 24
Mineral Commodity Price Levels, 2001-07

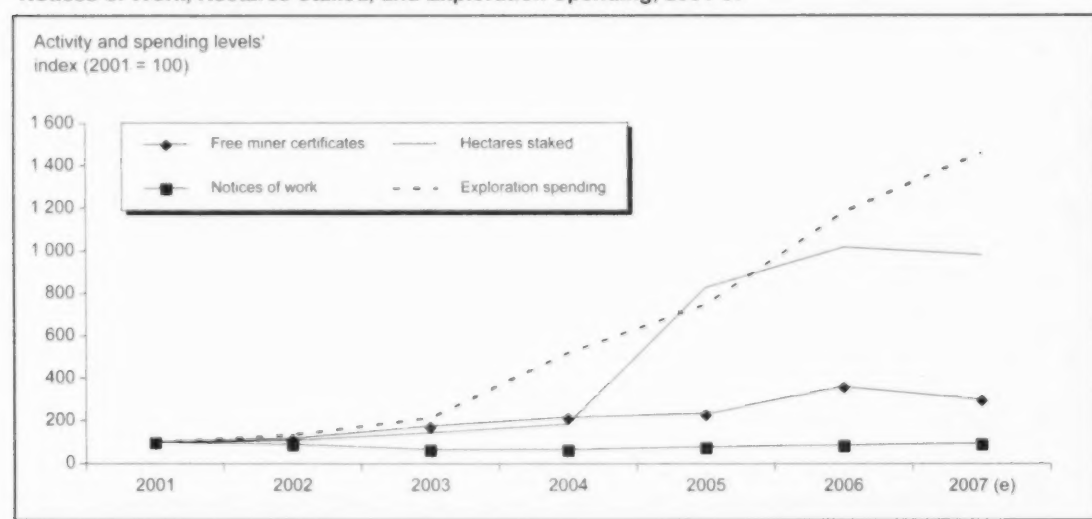


Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

(f) Forecast.

(1) The price for molybdenum is the price of MoS_2 .

Figure 25
Exploration Activity in British Columbia as Indicated by Free Miner Certificates, Notices of Work, Hectares Staked, and Exploration Spending, 2001-07

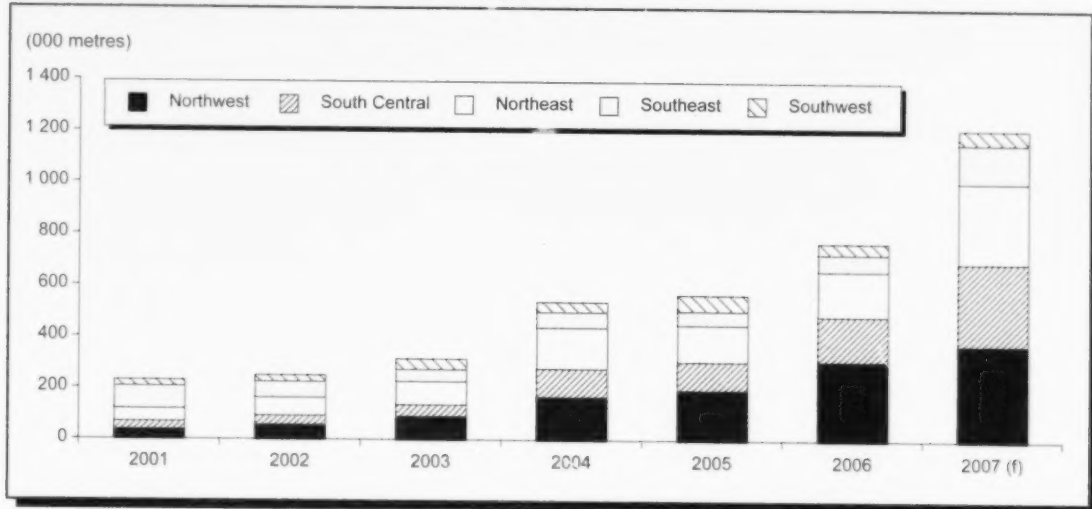


Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

(e) Estimate.

Note: Exploration spending in 2007 is based on a revised forecast of intentions.

Figure 26
Exploration Drilling in British Columbia, by Region, 2001-07

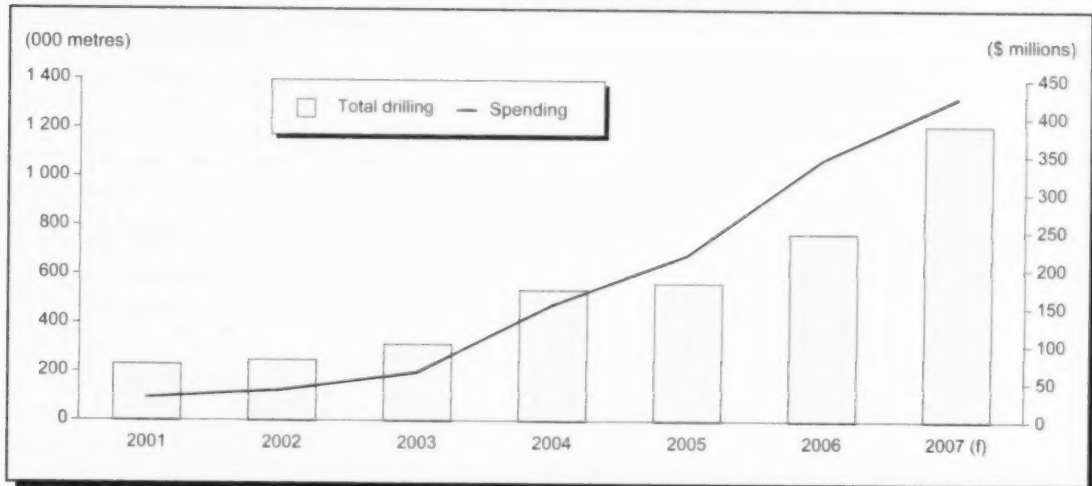


Sources: Regional Geologists; British Columbia Ministry of Energy, Mines and Petroleum Resources.

Note: Regional Offices: Southwest = Vancouver, Southeast = Cranbrook, South-central = Kamloops, Northeast = Prince George, Northwest = Smithers.

(f) Forecast.

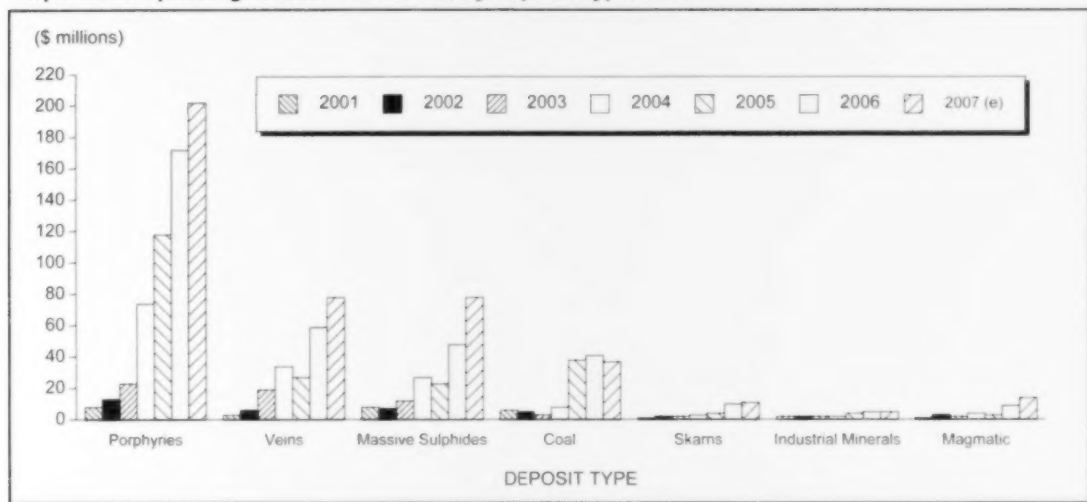
Figure 27
Exploration Drilling and Exploration Expenditures in British Columbia, 2001-07



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

(f) Forecast.

Figure 28
Exploration Spending in British Columbia, by Deposit Type, 2001-07



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.
 (e) Estimate.

It should also be noted that less costly but highly successful exploration is taking place in many other areas, such as industrial minerals and construction aggregates. In **Figure 28**, these two mineral groups are categorized under "industrial minerals" and individual projects are listed in **Table 16**. Both the Orca and Swamp Point aggregate pits came on stream in 2007. There is excellent potential for building high-volume, long-term businesses that supply western U.S., and particularly California, coastal aggregate markets.

In 2007, **Figure 29** shows a surprising change in trend to smaller spending on deposit appraisals and larger spending on mine complex developments. To some extent, money has moved to mine complex developments as new mines have opened and re-opened (note the first six entries in **Table 16**). Mines open quickly when mineral prices are high in order to expedite the speedy recovery of capital costs. Additionally, many new mines also find it prudent to spend money on exploration to extend reserves, which will assure the longevity of their operations.

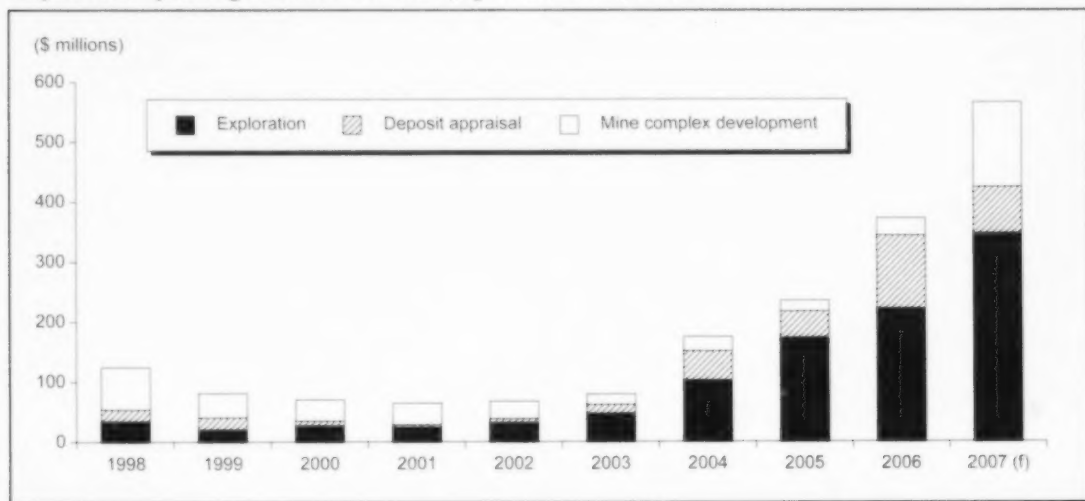
In addition to the advanced phases of exploration being carried out, **Figure 29** also shows a big 50% jump in the exploration component alone in 2007 over 2006. This is a good sign for the longer-term health of the industry as a large number of additional grassroots projects are discovered and developed.

Metal Economics Group, in its recent survey of world exploration, has stated that, "junior exploration spending has increased by a remarkable 909% since the bottom of the cycle in 2002."

Figure 30 verifies this trend in British Columbia, where spending by juniors has increased almost exponentially compared with the more linear increase in spending by the senior companies.

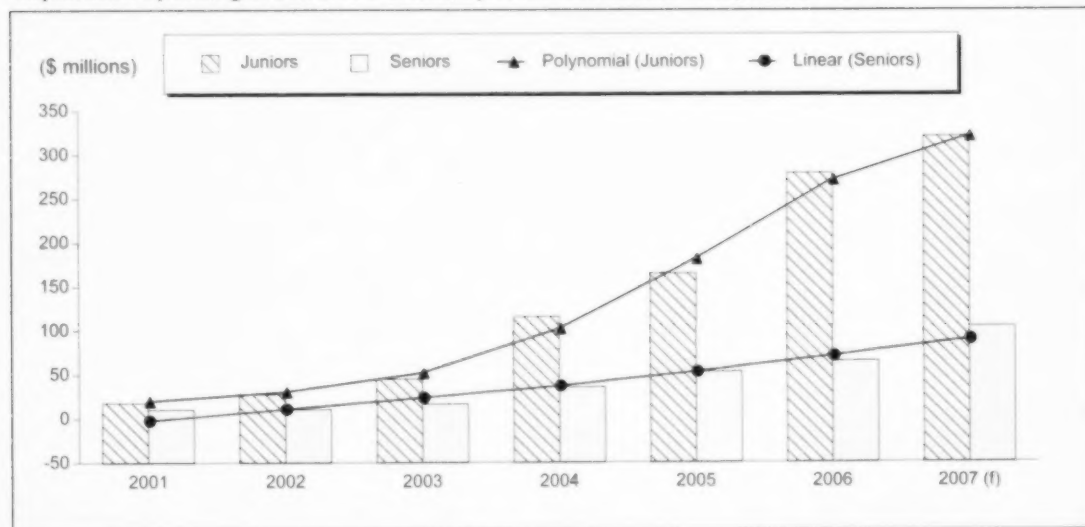
In summary, all of these exploration trends in British Columbia confirm the existence of an exceptional and sustained boom in exploration spending that began in 2002 and that has continued for five years right through to 2007.

Figure 29
Exploration Spending in British Columbia, by Work Phase, 1998-2007



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.
 (f) Forecast.

Figure 30
Exploration Spending in British Columbia, by Junior and Senior Companies, 2001-07



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.
 (f) Forecast.

Exploration Highlights

In 2007, exploration spending on over 500 active projects is forecast to exceed \$400 million. **Figure 31** compares the number of companies exploring with the average exploration expenditure per company. The 2007 forecast shows that while the number of companies is down, exploration spending is up, and that the average spending per company is at an all-time high of more than \$1.8 million.

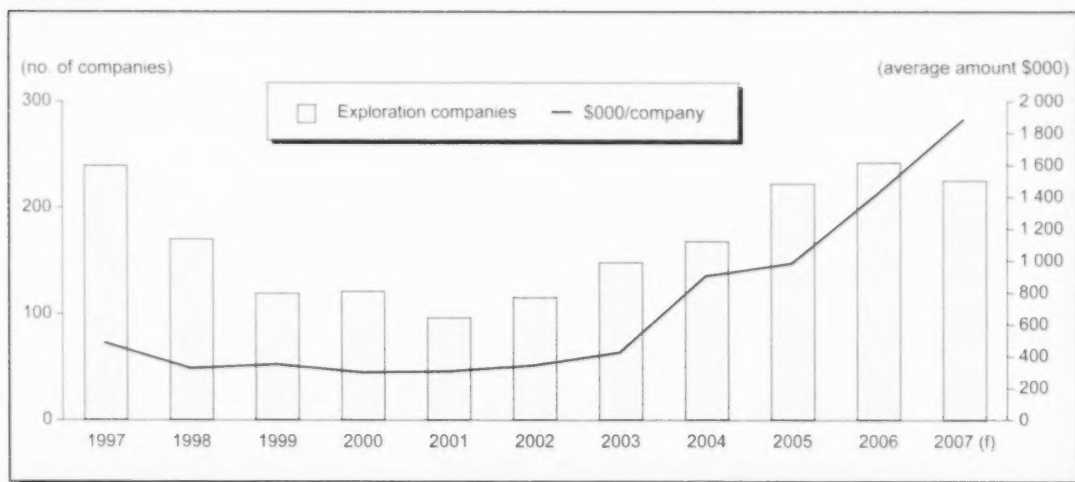
As in 2006, there were over 500 active projects in the province in 2007. Because of the large number of projects, only 170 projects in the more advanced stages of exploration and deposit appraisal are summarized in **Table 16**.

The table is investor oriented and divided into four sections to reflect the transition of projects from stages of advanced exploration to newly operating mines. Section 1 lists the newly operating mines within the past three years. Sections 2 and 3 include more than 60 exploration projects that are largely at the pre-feasibility stage or better. In general, exploration on these projects has identified some level of measured-indicated and/or inferred reserves. The 25 projects in Section 2 are considered the most advanced, since all are either in or through the mine-permitting process. The locations of all projects in Sections 1, 2 and 3 are plotted in **Figure 32**.

Section 4 of **Table 16** highlights more than 100 additional advanced-stage projects that are currently attracting large sums of exploration spending (i.e., more than \$1 million cumulative from 2005 to 2007). Internet links to detailed profiles of these projects and the many other active exploration projects, as well as profiles of the mineral occurrences in the province, overviews of exploration and geology, and maps covering project locations, mineral potential and geology, can be accessed on the B.C. Geological Survey web site at www.em.gov.bc.ca/mining/geolsurv/Publications/.

In conclusion, the large number of advanced and "advancing" exploration projects, as listed in **Table 16** and located on **Figure 32**, are British Columbia's assurance of a continuous stream of future mine developments. This is well illustrated by the fact that the Max, Orca, and Swamp Point mines all began operations in 2007. All three projects are examples of progression from Section 2 to Section 1 of **Table 16** within the past year.

Figure 31
Number of Exploration Companies and Average Amount Spent Per Company in British Columbia, 1997-2007



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.
(f) Forecast.

Figure 32
Advanced-Stage Exploration Projects and Recent Mine Development in British Columbia, 2007



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.

Note: An interactive version of this map can be accessed at <http://webmap.em.gov.bc.ca/mapplace/minpot/minEconomy.cfm>.

British Columbia's Exploration In a National/International Context

As Canada's only west coast port jurisdiction, with a long history of servicing both Pacific Rim countries and the world at large with mineral commodities, there is good reason to look at the province's exploration in a national/international context.

The world dynamic is changing for the exploration and mining industry. For example:

- Head offices of several major Canadian mining corporations have moved offshore;
- BRIC countries (Brazil, Russia, India, and China) are consuming increasingly greater amounts of mineral commodities than either the United States or Europe;
- Current and previous centrally planned economies are increasing their access to world capital markets for exploration and mining developments; and

- These same countries are expanding their own capacity to raise mining and exploration finance (Shanghai, Hong Kong, Bovespa-Brazil stock exchanges, etc.).

In order to assure optimum and sustained growth of exploration, mine development, and mineral exports as world mineral-importing and -consuming markets evolve, the province is beginning to view its exploration in a broader national/international context. This section provides a brief snapshot of the exploration sector in 2007.

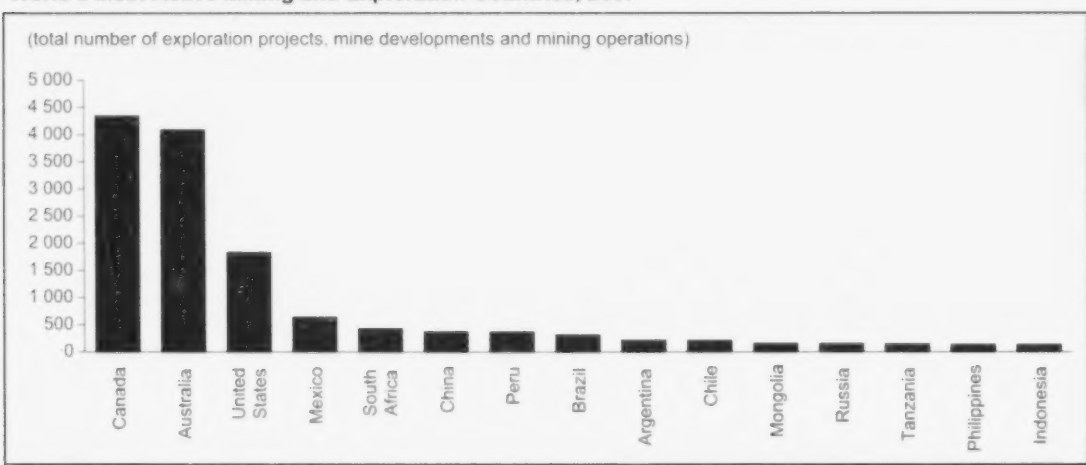
Intierra Resource Intelligence receives continuous data feeds from the world's major exploration and mining venture capital exchanges. **Figures 33 to 36** draw on Intierra's database to provide the following snapshots of Canada's and British Columbia's exploration activity within a world setting. Briefly, **Figure 33** highlights the world's 15 most active countries in terms of exploration projects and mining operations. Currently, Canada ranks as number one.

In **Figure 34**, Intierra narrows the focus to Canadian jurisdictions and compares active projects with total projects in each province and territory. The "winning" jurisdictions are the three "Hot Spots" where its percentage of Canada's total "active projects" exceeds its percentage of "all projects," based on a five- to six-year history. In October 2007, British Columbia emerged as one of the "Hot Spots" and held a further advantage over the Saskatchewan and Manitoba "Hot Spots" by hosting nearly 25% of both total and active projects.

In **Figure 35**, only the world's jurisdictions that produce or explore for any or all of British Columbia's seven key mineral commodities (i.e., coal, copper, gold, molybdenum, zinc, silver, and lead) are included. British Columbia and other major states and provinces are broken out so that the figure highlights the 20 most active jurisdictions.

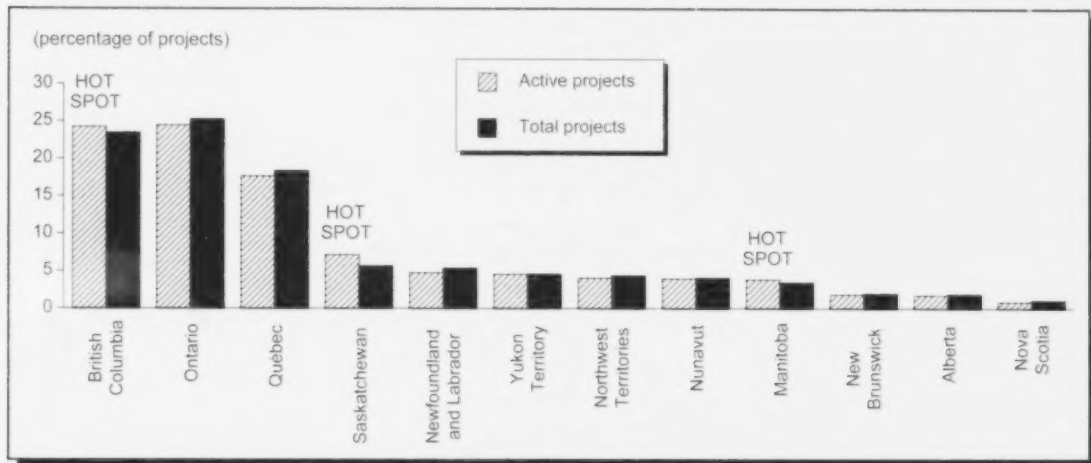
In a further step, cluster analysis was applied to the 89 jurisdictions (i.e., provinces and states in Canada, the United States, Australia, Mexico, and countries in the rest of the world) that explore for or produce any of British Columbia's seven key mineral commodities. **Figure 36** is the dendrogram resulting from this preliminary "cluster analysis." Forty-nine mineral commodity and exploration mining-phase parameters were incorporated for each of the eighty-nine jurisdictions in this analysis.

Figure 33
World's Most Active Mining and Exploration Countries, 2007



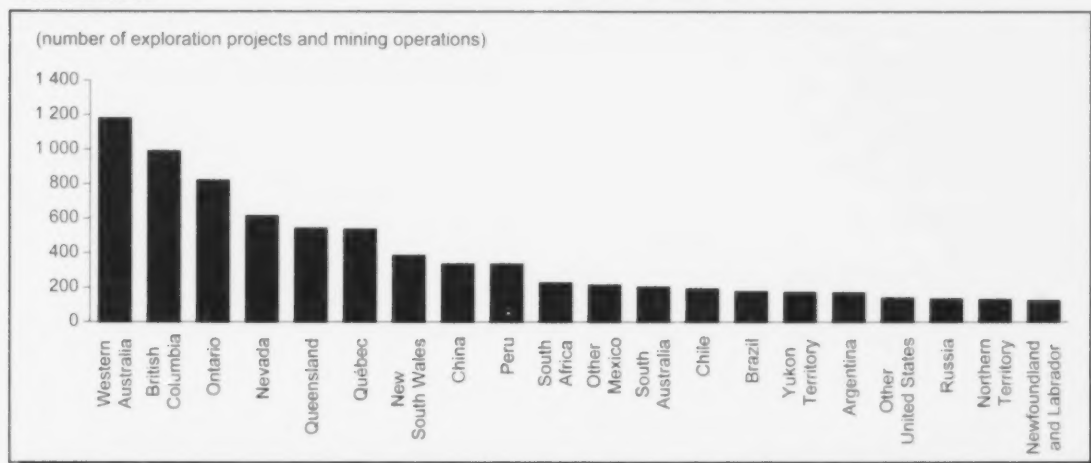
Source: Intierra Resource Intelligence database.

Figure 34
Canada's "Hot Spots," December 2007



Source: Intierra Resource Intelligence (from Intierra's database and compiled results).

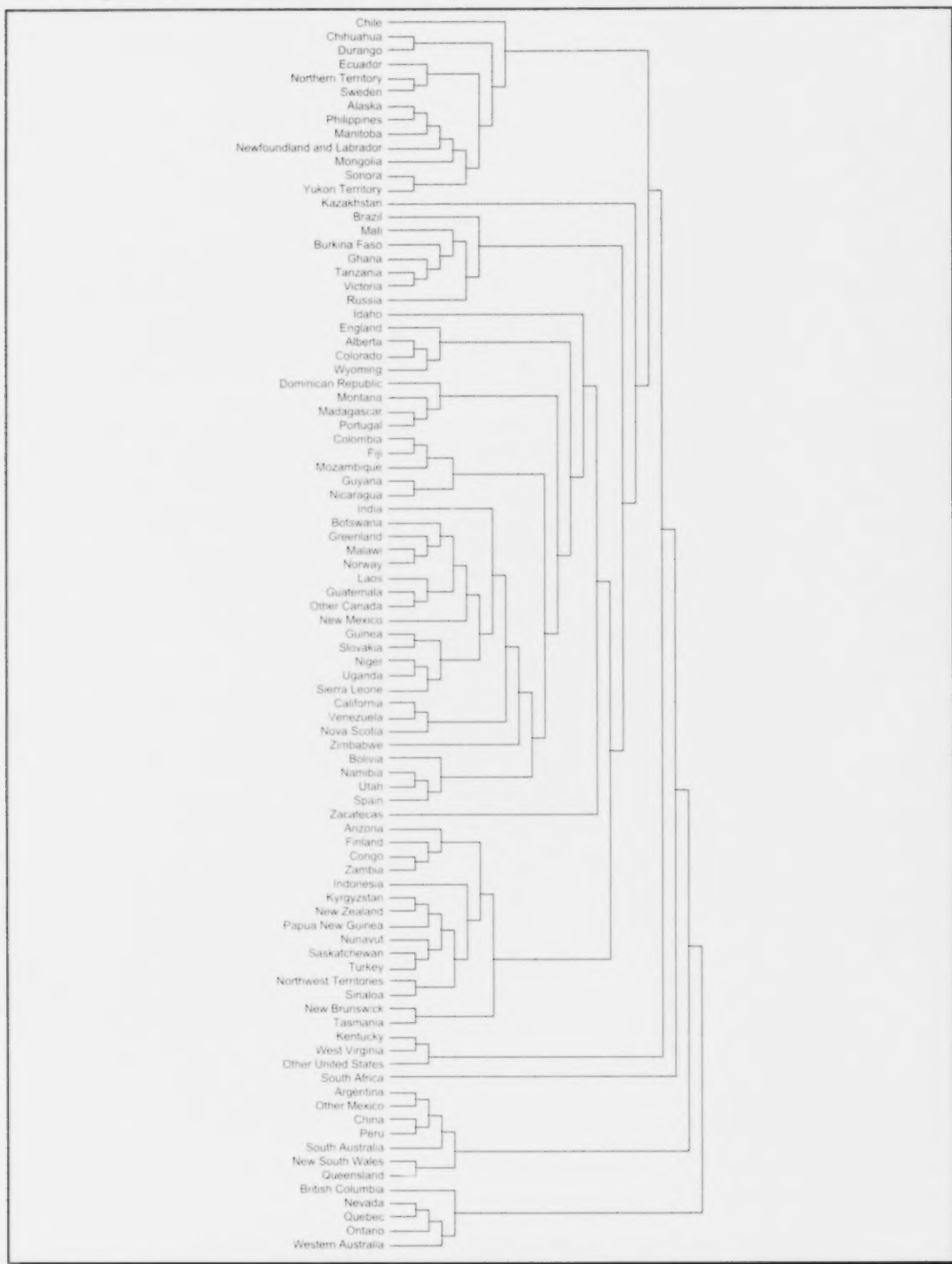
Figure 35
Top 20 Most Active Jurisdictions Competing in Any or All of British Columbia's Seven Key Mineral Commodities



Source: Intierra Resource Intelligence database.

As indicated in **Figure 36**, British Columbia clusters most closely with the 13 jurisdictions at the bottom of the dendrogram, and next with the 14 jurisdictions at the top of the dendrogram. This quantitative cluster analysis is, to some extent, supported by empirical observation. Very generally, these two clusters include jurisdictions that have similar mineral endowments, similar mineral terranes, a long history of successful mining, the presence of active junior mining companies with reasonable access to risk capital, and are low on the political/business risk scale, etc. In summary, these brief and somewhat preliminary snapshots further indicate the strength of British Columbia's

Figure 36
Cluster Analysis of 89 Jurisdictions Competing in Exploration and Mining for British Columbia's Seven Key Mineral Commodities



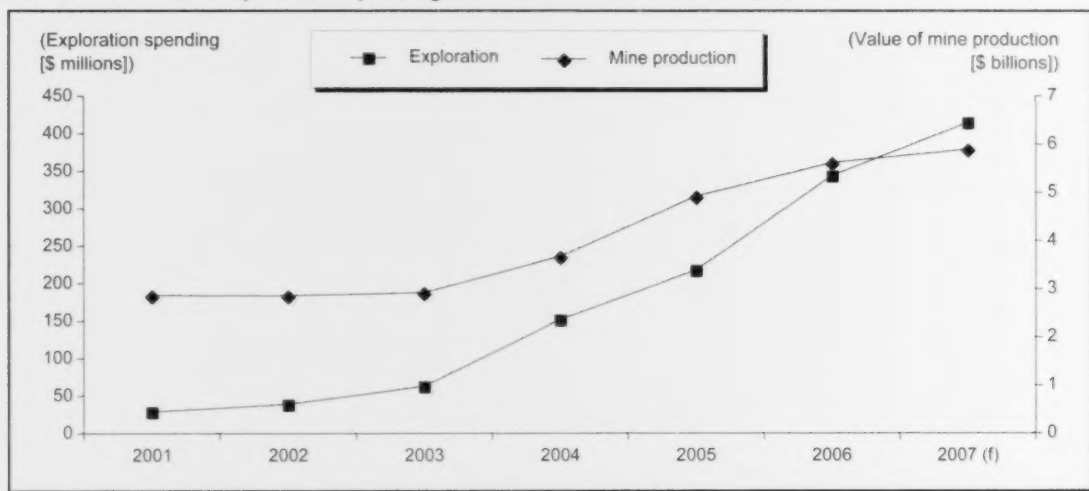
Sources: British Columbia Ministry of Energy, Mines and Petroleum Resources; Intierra Resource Intelligence database.

current exploration activity. This positioning should continue and the province will not only maintain, but will also grow in its reputation as a "preferred mineral supplier jurisdiction" to international markets.

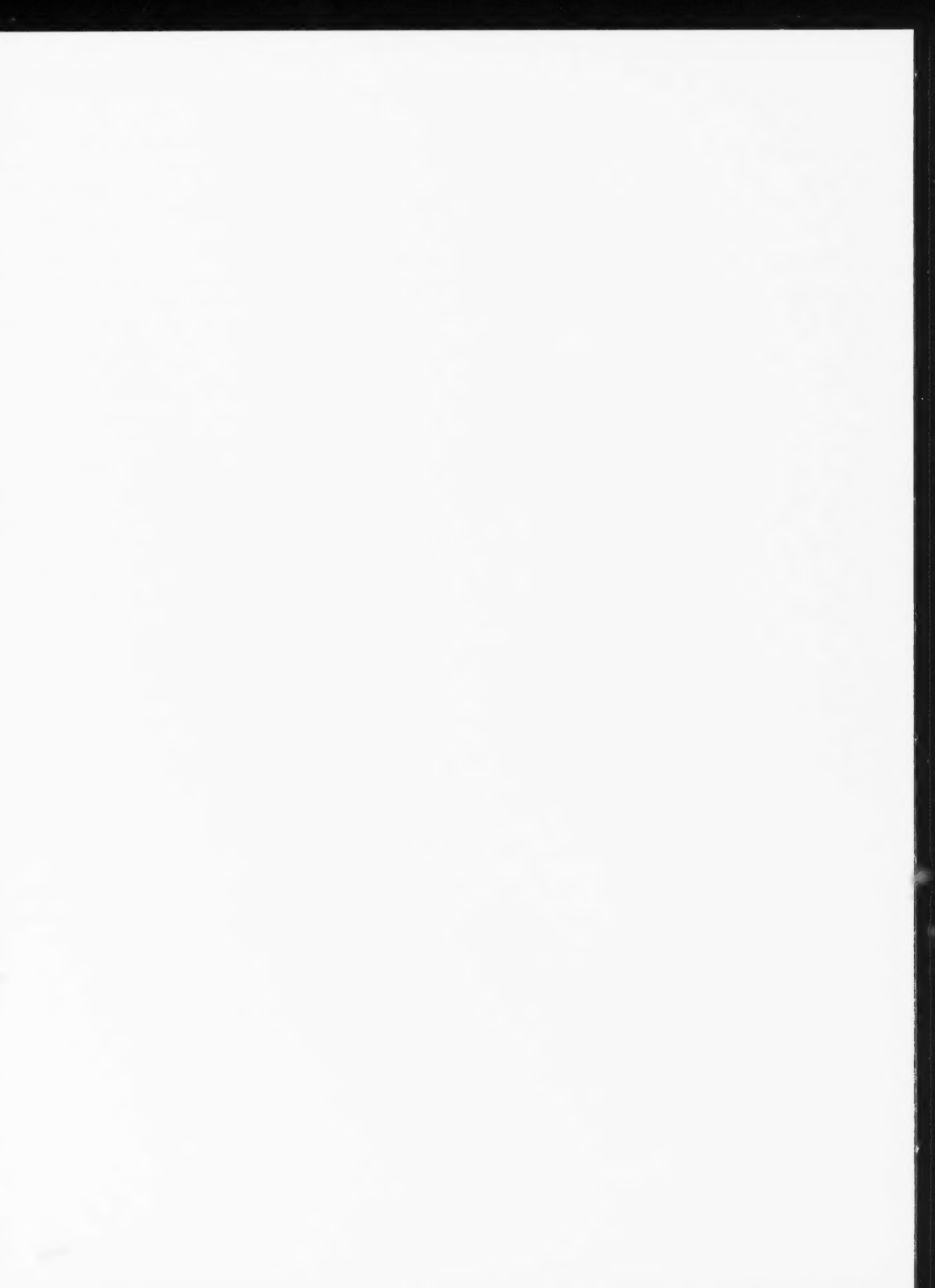
Conclusions and Future Outlook

British Columbia's current position as a world-class exploration and mining jurisdiction is solid. The province has seen extraordinary and sustained growth in its exploration and mining sectors over the past four to five years. **Figure 37** illustrates growth in exploration spending of over 900% and growth in the value of mine production of over 100% since 2002. For three years, the province has ranked number two in Canada's share of exploration spending. Nine mines have opened or re-opened in the past three years, over 60 projects are at the pre-feasibility stage or better, and over 100 more are showing significant exploration results (**Table 16**). Junior mining companies are generally well-financed for the 2008 field season, so expectations for continued high levels of exploration spending for the coming year are very favourable.

Figure 37
British Columbia's Exploration Spending and Value of Mine Production, 2001-07



Source: British Columbia Ministry of Energy, Mines and Petroleum Resources.
(f) Forecast.



2.11 YUKON²¹

Introduction

Mineral exploration in the Yukon in 2007 continued its dramatic rise from the past few years with an estimated \$130 million spent on the search for base and precious metals, and uranium (**Figure 38**). Exploration for gold held the largest share of exploration expenditures (29%), followed by zinc and copper (23% each), silver (10%), uranium (8%), and tungsten, molybdenum, nickel, and others (together 8%).

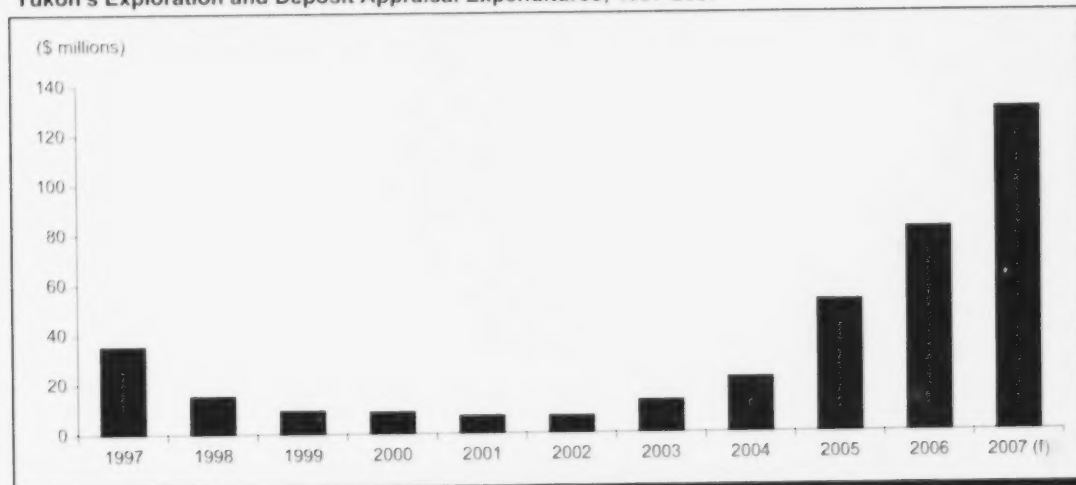
The total Yukon placer gold production in 2007 was 63 929 crude oz (1 988 400 g), compared to 58 294 crude oz (1 813 100 g) in 2006. The value of this 2007 gold production was \$38.13 million, or US\$35.63 million.

Mine development expenditures have also increased to an estimated \$72 million. The bulk of development dollars were spent on the Minto copper-gold mine, which achieved commercial production on October 1, 2007, and at the Wolverine zinc-silver deposit, where road and site preparation for the construction camp was completed. Final development of the Wolverine polymetallic deposit will begin upon completion of additional project financing. The total Phase 1 development costs at Minto were \$100.2 million over two years – this was only 2% above the feasibility study estimate of \$98.1 million.

Exploration activity at all levels in the Yukon, from grassroots stages to advanced exploration, pre-feasibility, and feasibility-stage projects, have experienced an increase. There were approximately 170 exploration projects in the Yukon this year; 97 had expenditures of greater than \$100 000 with 29 spending more the \$1 million. The remaining projects were regional or grassroots generative projects. Claim-staking statistics are shown in **Figures 39 and 40**.

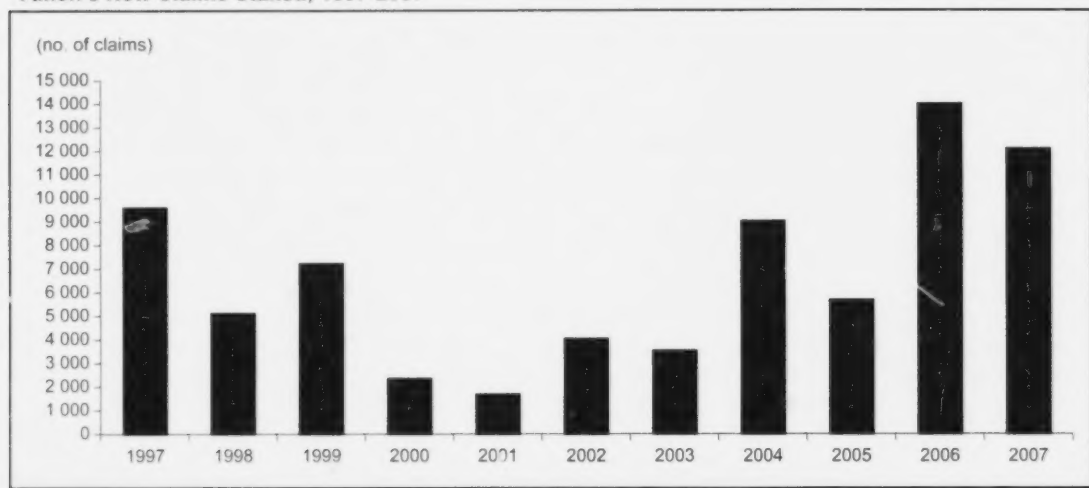
²¹ The Yukon review of activities was prepared by Mike Burke. For more information, the reader is invited to contact Mr. Burke by telephone at 867-667-3202 or by e-mail at Mike.Burke@gov.yk.ca.

Figure 38
Yukon's Exploration and Deposit Appraisal Expenditures, 1997-2007



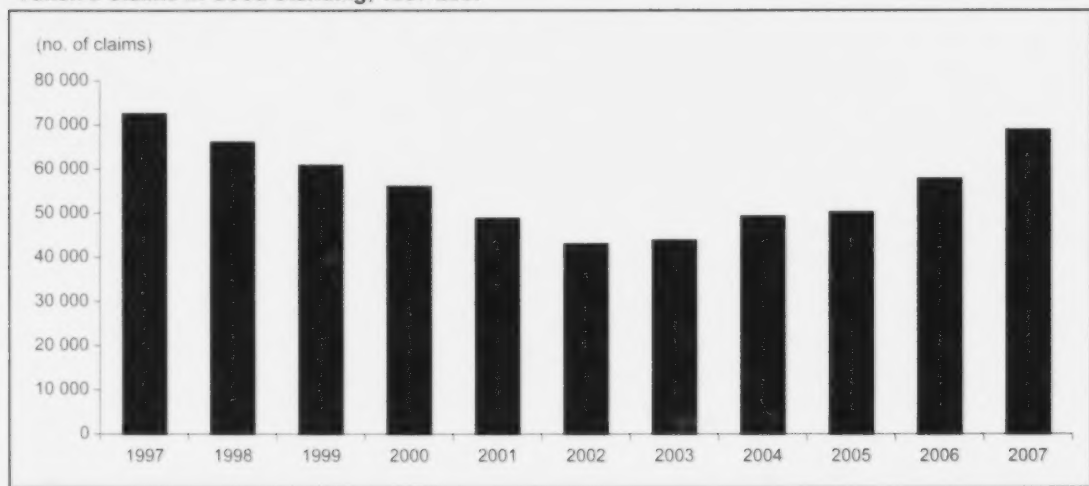
Source: Yukon Geological Survey.
(f) Forecast

Figure 39
Yukon's New Claims Staked, 1997-2007



Source: Yukon Geological Survey.

Figure 40
Yukon's Claims in Good Standing, 1997-2007



Source: Yukon Geological Survey.

Control over the Territory's natural resources was transferred from Canada to the Yukon government in 2003. Decisions regarding oil and gas, mining, lands, forests, and water are now made by the Yukon government. Internally, the government has initiated an Integrated Resource Management Strategy. This strategy streamlines the review process by addressing policies and legislation gaps, and it establishes better collaboration between departments.

Yukon Geological Survey

The Yukon Geological Survey continues to benefit from stable funding from the Government of Yukon and from Indian and Northern Affairs Canada funding programs such as SINED (Strategic Investments in Northern Economic Development). This has enabled the Yukon Geological Survey to undertake a wide range of projects that fulfill its mandate to provide the geoscience information needed to support the sustainable development of the Yukon's non-renewable resources. Capacity constraints within the Yukon Geological Survey, the Geological Survey of Canada, and universities, and among geophysical contractors, impeded the ability to undertake some projects and slowed others. For example, some promising mineral deposits studies could not proceed because of difficulty in attracting students and researchers. Regardless, the Yukon Geological Survey managed to carry out or fund over 24 field projects, including bedrock and surficial mapping; mineral deposit, placer, hydrocarbon-related, surficial and topical studies; geophysical surveys; and outreach. The Yukon Geological Survey is partnering with the Geological Survey of Canada on many projects and is also supporting the research of a number of graduate students. This work includes bedrock mapping, surficial mapping, regional stream sediment and till geochemical surveys, and geophysical surveys for the Yukon.

Government Programs

An example of the Integrated Resource Management Strategy is the Project Management process that assists mining companies in their efforts to secure permits for development proposals. Project coordinators are assigned to individual projects to assist with the reviews and timely resolution of issues for each project. The project coordinators report to a team of deputy ministers that is responsible for regulatory approvals. This committee is chaired by the Department of Energy, Mines and Resources.

The Department of Energy, Mines and Resources has begun a review of the *Quartz Mining Act*. The purpose of this review is to encourage exploration and development by reducing the overall cost of doing business in the north. This review is taking place in two stages. The first stage, under way now, will focus on the administration of mining claims with the intent of making the process of staking and maintaining quartz mining claims more efficient and less costly. The second stage of this initiative will focus on possible amendments to the royalty provisions of the *Quartz Mining Act* and will begin later in 2008.

The Yukon Mining Incentives Program (YMIP) is designed to promote and enhance mineral prospecting, exploration, and development activities in the Yukon. The program's function is to provide a portion of the risk capital required to locate and explore mineral deposits. The Yukon is one of the few Canadian jurisdictions that has a long, steady history of supporting programs like this, which support exploration for grassroots (early-stage) projects and prospectors. This program has been extremely successful in generating new mineral discoveries and advancing mineral exploration projects in their earliest stages. In 2007/08, funding totaling \$719 850 was offered to 45 of 56 applicants. Proposals approved for funding included 4 under the Grassroots-Prospecting module, 17 under the Focused Regional module, and 24 under the Target Evaluation module.

The Mining and Petroleum Environmental Research Group (MPERG) is a cooperative working group made up of government agencies; environmental, mining, and petroleum resource companies; Yukon First Nations; and non-governmental organizations (NGOs). It was established to promote research into environmental issues for mining and petroleum development in the Yukon. Participants bring together their resources and knowledge to work cooperatively on industry-related environmental issues and projects. MPERG creates a favourable environment to facilitate finding solutions before environmental problems arise.

Five studies were approved for funding for 2007/08:

- Yukon Government, Oil and Gas Management Branch: Stage 2 investigation of seismic lines and associated disturbances, and the development of a recovery curve for modeling the cumulative footprint of oil and gas development in North Yukon;
- EDI Environmental Dynamics Inc.: Guidelines for Industrial Activity in Bear Country;
- EDI Environmental Dynamics Inc.: Guidelines for Flying in Caribou Country;
- EDI Environmental Dynamics Inc.: Natural Sources of Contaminants in the Yukon (with a focus on selenium and other organophilic elements); and
- Amber Church, Simon Fraser University: Contemporary glacial influences on the hydrology and geomorphology of Wheaton River, Yukon.

The Strategic Industries Branch of the Yukon Department of Economic Development helps identify and assist the development of industries and strategic projects with the potential for broad-based economic benefits for the Yukon. A variety of assistance is provided by the Strategic Industries Branch, including assistance from the Strategic Industries Development Fund (SIDF) for eligible strategic projects or activities in the preliminary, development, and implementation stages. Projects that received assistance through this fund included Sherwood Copper Corp.'s wholly owned subsidiary, Minto Explorations Ltd., receiving up to \$200 000 in financing to support the advancement of the Area 2 discovery at the high-grade Minto copper-gold mine toward a production decision, and Pacifica Resources Ltd. receiving up to \$97 200 for studies on the concentrate handling, shipping, and port facilities for the Selwyn project.

Information Management

With the increasing volume of information generated by the Yukon Geological Survey and others, and rapidly evolving digital technology, the Survey continues to put significant resources into making geological information more accessible. Its web site and Map Gallery have both undergone substantial revisions that make them easier to use and provide greater on-line functionality to the MINFILE and publications databases. A large part of the effort has gone into developing and maintaining key databases and making all of the information Internet-accessible. Ongoing activities include support for the H.S. Bostock Core Library and the Energy, Mines and Resources library (Elijah Smith Building).

The Yukon Placer Database was updated and a new version was released in May 2007 with detailed updated information from placer mining activity between 2003 and 2006. The database is in Microsoft Access 2000 format and is a comprehensive record of the geology and history of Yukon placer mining. The database contains descriptions of 457 streams and rivers, and 1443 associated placer occurrences of which 130 were updated for this version. It also includes location maps in Portable Document Format (PDF). The Yukon Geological Survey is currently working towards bringing this database on-line.

The Yukon Geological Survey, in partnership with the Geological Survey of Canada, is planning to update the Yukon Digital Geology compilation, which was last revised in 2003. The revised database will not only incorporate recent maps, but will also conform to the North American Data Model. This standard, which is slowly being adopted by geological surveys across North America, allows users to generate a seamless map from more than one source (i.e., two or more jurisdictions). The model will allow the selection of subsets of data to generate maps defined by lithology, age, or map unit. It will also be possible to create generalized maps through a hierarchy of attributes (i.e., Group vs. Formation or Paleozoic vs. Devonian). The Yukon Geological Survey began development of a Digital Surficial Geology Map of the Yukon in partnership with the Geological Survey of

Canada and with SINED funding. The map database will have the same functionality as the bedrock database. Release is planned for early 2008.

The Yukon Regional Geochemical Database 2003 contains all of the available digital data for regional stream sediment surveys that have been gathered in the Yukon under the Geological Survey of Canada's National Geochemical Reconnaissance Program. It can be viewed on-line through the Map Gallery and is available on CD-ROM in Microsoft Excel 2000 format and in ESRI ArcView Shapefile format.

The YukonAge Database, compiled by Katrin Breitsprecher and Jim Mortensen at the University of British Columbia with funding from the Yukon Geological Survey, was updated in 2004. It can be viewed on the Yukon Geological Survey's Map Gallery in a version modified by Mike Villeneuve and Linda Richard of the Geological Survey of Canada. The database now contains 1556 age determinations derived from 1166 rock samples from the Yukon Territory. It is available in both Microsoft Access 2000 format and as a flat file in Microsoft Excel 2000 format so that the data may be viewed without Microsoft Access.

The Yukon Geoscience Publications Database is available on-line. It is current and contains more than 8000 references to papers on Yukon geology and mineral deposits, including Yukon Geological Survey publications.

All open assessment reports (more than 5000) are now in PDF format and accessible over the Internet through the Energy, Mines and Resources library web site. In the Yukon, reports remain confidential for five years. In addition, Energy, Mines and Resources has acquired exploration records from the various companies that owned the Faro District. This acquisition includes both records of the Faro District and records for other projects. Most of the records are now available for viewing.

The H.S. Bostock Core Library contains about 128 000 m of diamond drill core from about 200 Yukon mineral occurrences. Confidentiality of material is determined on the same basis as mineral assessment reports. Confidential core can be viewed with a letter of release from the owner. Rock saws and other rock preparation equipment are available to the public.

The Yukon Energy, Mines and Resources Library is the Yukon's largest scientific library and an invaluable resource. It is located in Room 335 of the Elijah Smith Building and is open to the public. The Library provides access to Yukon Mining Assessment reports, maps (geology, topographic and aeromagnetic), and aerial photographs. It holds many geology journals and a good selection of materials on general geology, Yukon geology, and economic geology. The Library is also the access point for Faro exploration records. In addition to geological information, the Library has books, reports, and journals in other areas, such as oil and gas, forestry, agriculture, and energy, as well as a very comprehensive collection of Yukon publications.

The Yukon Geological Survey distributes information in three formats: 1) paper maps and reports are sold and distributed through the Geoscience Information and Sales office; 2) many recent publications and databases are available in digital format at much lower prices than for paper copies; and 3) most publications are available as PDF files on the Survey's web site at www.geology.gov.yk.ca free of charge. A catalogue of assessment reports is also available on-line at www.emr.gov.yk.ca/library.

Spatial data are available through an interactive map server, the MapMaker Online (formerly the Map Gallery), which can be accessed through the Yukon Geological Survey web site. The Survey continues to improve MapMaker. Users are encouraged to provide feedback and suggest improvements.

Hard copies of Yukon Geological Survey publications are available at the following address:

Geoscience Information and Sales
c/o Whitehorse Mining Recorder
102-300 Main Street (Elijah Smith Building)
P.O. Box 2703 (K102)
Whitehorse, Yukon Y1A 2C6

Tel.: 867-667-5200
Fax: 867-667-5150
E-mail: geosales@gov.yk.ca

To access publications and to learn more about the Yukon Geological Survey, the reader can visit www.geology.gov.yk.ca or contact the Survey directly.

Placer Mining

Today, more than 100 years after the discovery of gold in the Yukon, placer mining is still an important sector in the Yukon's economy. Royalty records, which represent the minimum amount of gold production, show that over 16.6 million crude oz (518 t) of placer gold have been produced to date in the Yukon – at today's prices, that would be worth more than \$9.8 billion.

In 2007, there were 107 active placer mining operations employing approximately 350 people directly. Although the total number of operations was only one more than in 2006, the industry saw a fair amount of transition: ten operations moved to new drainages, four operations closed, nine operations were sold, and five new mines began operating. Although most placer operations are still small and family-run (with an average of three or four employees), there has been a recent trend of small, relatively inactive properties being sold to new owners and re-activated. In addition, several mine owners now own more than one active property, so there appears to be a shift towards larger operators.

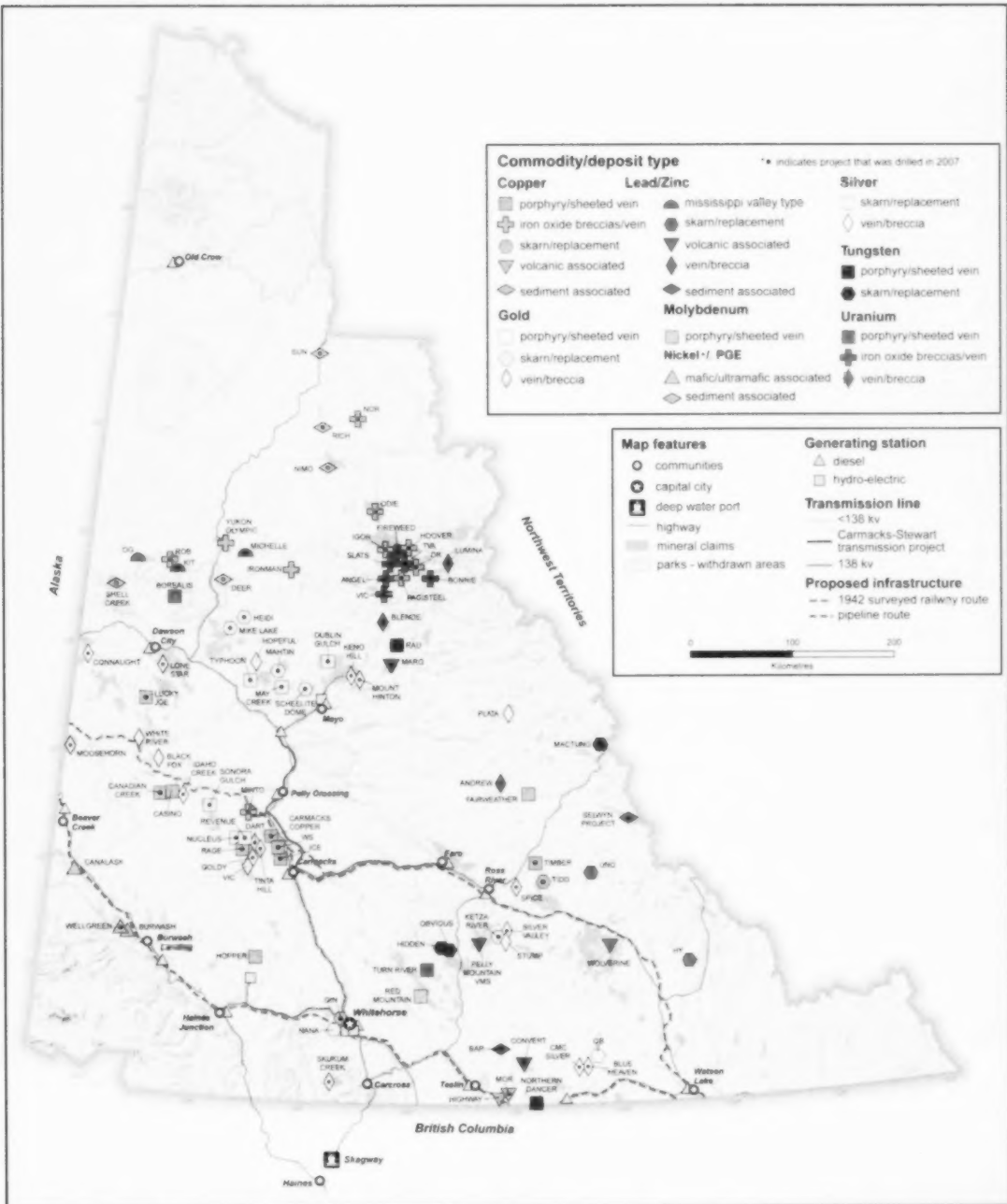
The total Yukon placer gold production in 2007 was 63 929 crude oz (1 988 400 g), compared to 58 294 crude oz (1 813 100 g) in 2006. The value of this 2007 gold production was \$38.13 million, or US\$35.63 million.

Mine Development

The Minto mine (**Figure 41**) is a high-grade copper-gold deposit operated by Sherwood Copper Corporation. Sherwood acquired the Minto project in June 2005 and, in just two years from its acquisition, completed a definitive feasibility study, arranged project financing, and spent \$100 million to bring the open-pit mine into production. Commercial production commenced on October 1, 2007. A Phase 2 mill expansion from 1563 t/d to 2400 t/d was completed ahead of schedule on December 15, 2007. A pre-feasibility study has also been completed that lays out the basis for a Phase 3 mill expansion to 3500 t/d of throughput and incorporates a significant portion of the Area 2 resources, resulting in a more than 40% increase in copper and gold production in comparison to its original feasibility study. Current total resources at the Minto mine, at a 0.5% copper cut-off grade, stand at 16 656 000 t (measured and indicated) grading 1.54% copper, 0.56 g/t gold, and 5.95 g/t silver, plus an inferred resource of 1 471 000 t grading 1.00% copper, 0.32 g/t gold, and 2.05 g/t silver (NI 43-101-compliant).

Yukon Zinc Corporation further advanced the Wolverine project. This included receiving both a Type A Water Licence and a Quartz Mining Licence, which allow the company to construct and operate the mine site until 2027. Access to the property was significantly upgraded with the completion of the all-weather tote road connecting to the Robert Campbell highway. Civil work consisting of site preparation for the construction camp was also completed. Final construction of the project will occur when final project financing is secured and a production decision is made.

Figure 41
Project Location Map, Yukon, 2007



Source: Yukon Geological Survey

Advanced Exploration

Precious Metals

Yukon Nevada Gold Corp., formerly YGC Resources Ltd., conducted a year-round exploration program that included geological mapping, geochemistry, trenching, airborne geophysical surveys, and extensive diamond drilling at its Ketz River gold-silver property. Just under 50 000 m of diamond drilling was completed in 363 holes, making this the Yukon's largest drilling program in 2007. Several new areas of mineralization have been discovered in the drilling in addition to the upgrading of known resource areas. The company will be using drilling results from 2006 and 2007 to update the resource calculation on the property, complete the pre-feasibility study, and make a production decision for an operation with an annual production of up to 100 000 oz of gold.

Dynamite Resources Ltd. explored the Mike Lake property, which covers a number of intrusive-related gold targets associated with Cretaceous Tombstone Suite intrusive stocks, dykes and sills. The upper skarn ridge area was drilled for the first time and resulted in a new discovery. Diamond drill hole SK-07-01 returned 89.31 m grading 0.61% copper, 1.383 g/t gold, and 13.6 g/t silver. Within this interval a 2.66-m section returned values of 0.64% copper, 12.30 g/t gold, and 14.6 g/t silver.

StrataGold Corp. discovered a new gold zone at its Dublin Gulch property. The Shamrock zone is located 3 km north-northeast of the Eagle zone gold deposit. Highlights from the 2007 program include DDH 321, which averaged 1.12 g/t gold over 15.24 m; DDH 326, which returned 16.76 m averaging 1.42 g/t gold; and DDH 328 at 9.34 m of 2.058 g/t gold. The new zone has been intersected over a strike length of 325 m and remains open in both directions along strike and down dip. Drilling was successful in intersecting additional mineralization outside of the resource area at the Eagle zone deposit. Drill hole 334C intersected 361 m of 0.98 g/t gold.

Northern Freegold Resources completed an extensive program on its Freegold Mountain property, including diamond drilling of 57 holes totaling 11 428 m on six different targets. The Nucleus zone consists of Cretaceous granodiorite sills intruding metasedimentary rocks intruded by later quartz-feldspar porphyry dykes. The first hole of the season, GRD07-41, returned 72.35 m of 2.5 g/t gold and 0.14% copper, including 2.00 m of 45.0 g/t gold. The best drill intercept released to date was hole GRN07-58, which intersected 74.97 m of 4.26 g/t gold, including 10.6 m of 20.26 g/t gold. At the Goldy zone, epithermal-style quartz veining and silicified zones associated with an altered quartz-feldspar porphyry body were intersected returning 53.75 m averaging 3.5 g/t gold, including an interval grading 15.45 g/t gold over 9.3 m. At the Tinta Hill zone, an intrusion-hosted polymetallic vein deposit was expanded along strike and to depth. Results from hole TH07-08 graded 1.7 m of 14.90 g/t gold, 446 g/t silver, 3.3% copper, 5.2% lead, and 0.66% zinc.

Tagish Lake Gold continued its year-round underground exploration at the Skukum Creek property located 80 km southwest of Whitehorse. The company is conducting pre-feasibility work examining the economics of a 270 000-t/y operation producing 1368 kg (44 000 oz) of gold and 31 100 000 kg (1 million oz) of silver per year.

Alexco Resources Corporation continued with a comprehensive exploration program on its Keno Hill property. Over the past century, the silver mines at Keno Hill have produced approximately 214 million oz (6 656 000 kg) of silver at an average grade of 40.4 oz/ton (1389 g/t) silver, 5.62% lead, and 3.14% zinc. The company released a new NI 43-101 resource calculation for the historic Bellekeno mine. The total inferred resource is stated at 356 000 t grading 1630 g/t silver, 20.3% lead, and 5.9% zinc. The current consolidated Bellekeno resource estimate incorporates 2006/07 Alexco drill results for the Southwest zone only, but does not include recent work from the 99 and East zones.

Base Metals

Selwyn Resources Ltd. completed an approximately \$25 million program on its Selwyn property. The program focused on expanding high-grade zones and upgrading mineral resources. The company also continued comprehensive baseline environmental studies and a technical program focused on metallurgy, mining techniques, and project infrastructure. Drilling highlights for the season include deeper intersections at the Don zone where a number of holes returned greater than 10% zinc and 5% lead over intervals in the 1.8-m to 6.25-m range, including hole Don-074, which intersected 31.63 m true thickness of mineralization at a depth of 241.7 m with a grade of 10.2% zinc and 3.91% lead, including 4.3 m grading 35.97% zinc and 16.01% lead. An upgraded resource calculation is expected shortly.

The Andrew deposit was acquired by Overland Resources, an Australian-based exploration company. Overland calculated a Joint Ore Reserves Committee (JORC)-compliant indicated and inferred mineral resource on the property of 5.92 Mt at 5.84% zinc, 2.03% lead, 9.49 g/t silver, and 14.86 g/t germanium. Several drill holes returned significant results and the deposit remains open in all directions. Hole AN07-30, the deepest hole on the deposit, returned 10.9% zinc and 20.2 g/t germanium over 13.0 m.

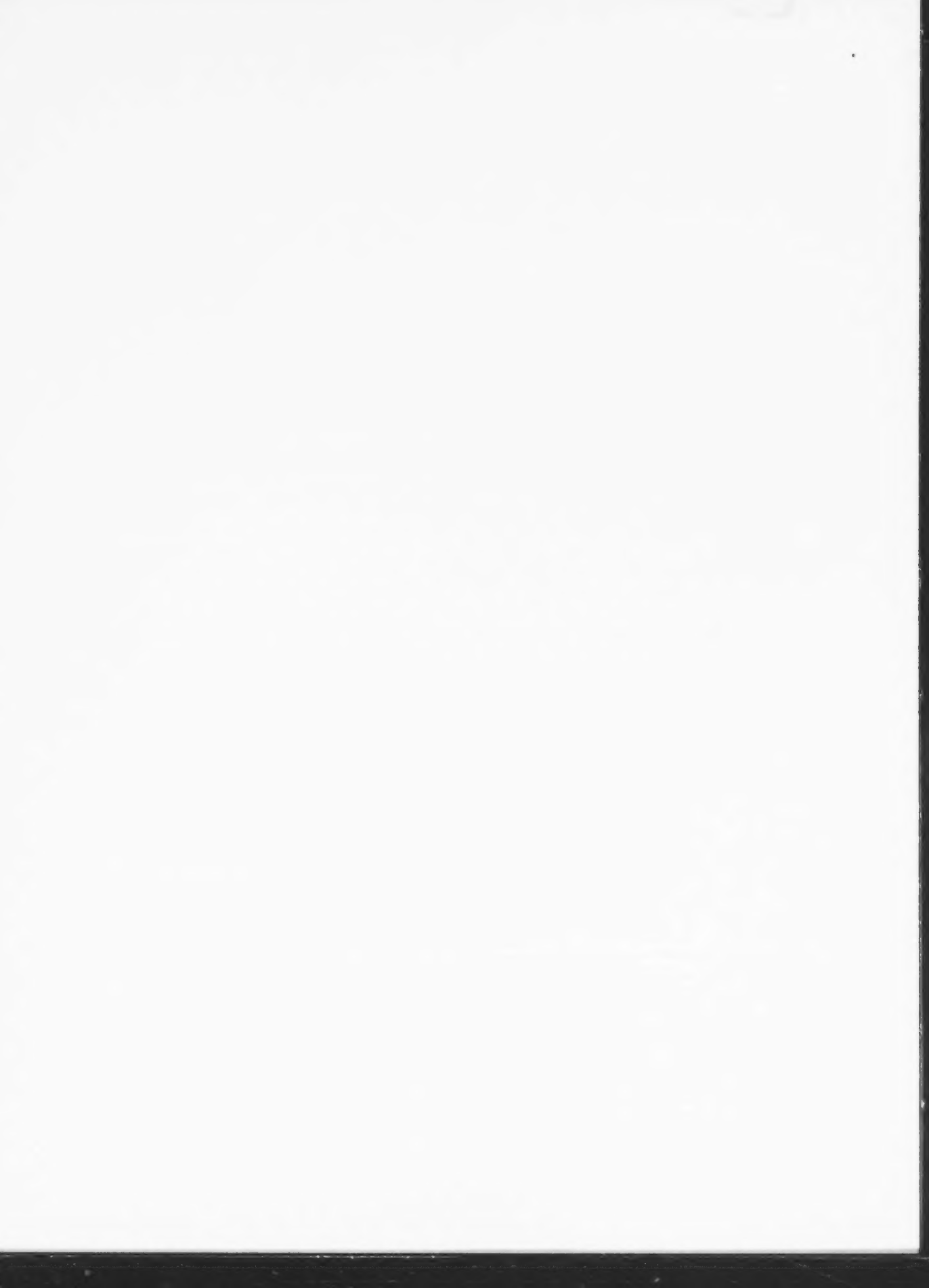
Western Copper Corp. reported the key findings of the independent feasibility study by M3 Engineering and Technology Inc. of Tucson and announced that the study supports the development of the Carmacks copper project. The NI 43-101 resource estimate at a 0.25% total copper cut-off grade is 11.98 Mt in the measured and indicated category grading 1.06% total copper, 0.84% oxide copper, 0.46 g/t gold, and 4.6 g/t silver. The deposit contains a significant measured and indicated sulphide resource of 4.34 Mt grading 0.75% copper, 0.21 g/t gold, and 2.3 g/t silver, plus an inferred resource of 4.03 Mt grading 0.71% copper, 0.18 g/t gold, and 1.9 g/t silver, both beneath oxide reserves in the main zones and in newly discovered targets peripheral to the planned open pits.

Cash Minerals Ltd. and joint-venture partner Mega Uranium Ltd. conducted an extensive drilling program at the Igor IOCG-U (iron oxide-copper-gold-uranium) property in the Wernecke Mountains. The first phase of drilling intersected 0.055% U_3O_8 , 2.82% copper, 5.2 g/t silver, and 0.03 g/t gold over 22.25 m. A high-grade section of 0.993% U_3O_8 , 2.70% copper, 0.07 g/t gold, and 5.7 g/t silver over 4.5 m was also intercepted. The companies also conducted exploration on numerous other properties in the area.

Fronteer Development Group Inc. and joint-venture partner Rimfire Minerals Corp. explored the Hoover property in the Wernecke Mountains. Drill-intersection highlights include hole HV07-22 with 0.56% copper and 0.11 g/t gold over 89 m (including 0.82% copper and 0.17 g/t gold over 39 m), and hole HV07-27 with 0.56% copper and 0.16 g/t gold over 45.5 m (including 1.84% copper and 0.53 g/t gold over 17.3 m). Mineralization at Hoover has been intersected in a total of 11 widely spaced holes over a strike length of 500 m, and remains open along strike and at depth. The companies also conducted exploration on numerous other properties in the area for copper-gold-uranium and as stand-alone uranium targets.

North American Tungsten Corporation Ltd. carried out a definitive feasibility study on the Mactung deposit. The Mactung deposit has NI 43-101-compliant indicated resources of 33.0 Mt grading 0.88% WO_3 (tungsten oxide) and an inferred mineral resource estimate of 11.9 Mt grading 0.78% WO_3 .

Largo Resources Ltd. has completed a new block model and an updated mineral resource estimate incorporating all recent and historical drilling results for the Northern Dancer property (Logtung deposit). The inferred mineral resource for the overall deposit, at a cut-off grade of 0.05% WO_3 , is estimated at 242.0 Mt grading 0.10% WO_3 and 0.047% MoS_2 .



2.12 NORTHWEST TERRITORIES²²

Introduction

The Northwest Territories constitutes 13.48% of Canada's total landmass. The geology of the Northwest Territories encompasses over 4 billion years of the earth's geologic history. Base- and precious-metal mines have traditionally been the mainstay of economic activity in the Northwest Territories; however, beginning in the early 1990s, there was a shift to diamond exploration and diamond mining. A focus has also returned to the vast oil and gas resources of the Mackenzie Valley and Delta. The Mackenzie Gas Project, designed to deliver 6.0 trillion cubic feet of natural gas to the North American continental grid, is undergoing a regulatory review.

Since the discovery of diamonds in the Lac De Gras region in 1994, the Northwest Territories has emerged as a significant producer of diamonds on the world stage and has placed Canada at the forefront of diamond producers. Canada's third diamond mine, the Snap Lake mine of De Beers Canada Mining Inc., commenced production in October 2007.

The Northwest Territories remains as busy as ever for the mining and mineral exploration industries. Diamonds continue to shine, but gold and base metals look ready for a northern renaissance as high commodity prices and world shortages continue to drive the mineral resource industry.

Mineral Production Summary

The total value of metal and diamond shipments from the Northwest Territories decreased to \$1.63 billion in 2006 from \$1.79 billion in 2005. The decrease is primarily due to lower diamond production and lower diamond values. Diamond shipments accounted for 95.9% of the total value of metal and nonmetal production in the Northwest Territories in 2006. The Northwest Territories accounted for 100% of Canada's diamond production.

The CanTung tungsten mine, which re-opened in October 2005, had production of 2561 t valued at \$55.7 million in 2006.

Producing Mines

There are four operating mines in the Northwest Territories (i.e., the Ekati, Diavik, and Snap Lake diamond mines, and the CanTung tungsten mine).

The Ekati mine (BHP Billiton Diamonds Inc. [80%]; C. Fipke [10%]; S. Blusson [10%]) continues to deliver, with production totals of 3 224 000 ct for the year ended June 30, 2007. The Beartooth open pit is in production and sending to the plant. As well, the Panda underground project is now in full production.

The Koala underground project continues to advance on schedule and is expected to deliver a total of 10.6 Mt of ore and recover 9.8 million carats (Mct) of high-quality diamonds over an 11-year period. Production is expected to begin in December 2007.

In May 2007, Mr. Ricus Grimbeek was appointed as the new President and Chief Operating Officer at the Ekati diamond mine, succeeding Mr. Sean Brennan.

²² This review was prepared by the Minerals, Oil and Gas Division of the Department of Industry, Tourism and Investment, Government of the Northwest Territories. For more information, the reader is invited to contact Christy Campbell by telephone at 867-920-3345 or by e-mail at christy_campbell@gov.nt.ca.

The Diavik diamond mine (Diavik) is an unincorporated joint venture between Diavik Diamond Mines Inc. (60%) and Harry Winston Diamond Corporation (40%) (formerly Aber Diamond Corporation). Diamond production for the quarter ended September 30, 2007, was 3.12 Mct grading 4.76 ct/t. Production from January to the end of October was 9 Mct.

Production is currently from the open pit of the A154 South kimberlite pipe, and production in the A418 pit is expected to begin by the end of 2007 as crews are currently stripping the overburden to expose the pipe for mining.

Work continued on the underground declines where the A21 and A418 pipes were reached. The development of the A21 pipe was deferred pending further engineering studies and economic evaluations. The feasibility of the underground development of the A418 and A154 pipes was completed and submitted for internal funding.

In September 2007, Rio Tinto announced the appointment of Mr. Kim Truter as Diavik Diamond Mines Inc.'s new President and Chief Operating Officer, succeeding Mr. Mark Anderson.

De Beers Canada's Snap Lake mine went into production in fall 2007. The first diamonds were produced in October 2007 and the first sale of rough diamonds will follow in January 2008.

This past year saw a high level of construction as work was done on the underground crushing chamber, installing the underground crusher, and completing the installation of all buildings and systems. The mine will ramp up production over the winter and intends to attain its average planned production rate of 3150 t/d by mid-2008. The Snap Lake mine will employ 500 people during full production and will produce 1.5 Mct/y. The life of the mine is estimated at 20 years.

North American Tungsten's CanTung mine produced 80 357 metric tonne units of tungsten for the quarter ending June 30, 2007. Mine staff are currently reviewing additional pillars and smaller bodies of mineralization to determine if they can be mined economically.

Wardrop Engineering Inc. has been engaged to conduct a full feasibility study of North American Tungsten's 100%-owned MacTung deposit in the Mackenzie mountains. Results from the study are expected in 9 to 12 months. MacTung has indicated resources of 33.0 million tons grading 0.88% WO₃, making it one of the largest undeveloped high-grade tungsten-skarn deposits in the Western World.

Exploration

Diamonds

Gahcho Kue is a DeBeers Canada Incorporated (51%) and Mountain Province Diamonds Incorporated (49%) joint venture. Work for 2007 included an 8400-m drilling program to define the Tuzo pipe and a review of the 2005 pre-feasibility study. In addition, 5-7 holes are being drilled over 1500 m to recover approximately 60 t of material and about 100 ct of diamonds from the 5034 pipe. This bulk sample will be used to confirm the micro to macro relationships on the north lobe of the pipe.

The Gahcho Kue project is currently under Environmental Impact Review by a panel established by the Mackenzie Valley Environmental Impact Review Board. De Beers is expected to release an Environmental Impact Statement for the project in the near future.

Diamondex Resources Limited's 100%-owned Lena West project totals 3.35 million acres and is centred approximately 900 km northwest of Yellowknife. The 2007 exploration plan included up to 700 follow-up Heavy Mineral Concentrate samples, approximately 10 000 line-km of airborne geophysics surveying, and 1500-2000 m of diamond drill testing of priority targets. Diamondex has purchased Trigon Uranium Corp.'s diamond properties.

Diamonds North Resources Limited continued to explore its Hepburn project located 300 km north of Yellowknife, which has potential for both diamondiferous kimberlites and uranium. Twenty-one geophysical targets were drill tested in the summer of 2007, but no kimberlite was intersected. As well, detailed geophysics surveys are being conducted on the remainder of the property.

Peregrine Diamonds Limited's concluded a bulk sample program on the DO-27 pipe in June 2007. A final total of 2651 wet tonnes of kimberlite was extracted with an average recovered grade of 0.89 ct/t. In total, 1724.57 ct were recovered. The diamonds are waiting to be shipped to Antwerp, Belgium, for valuation by independent valuers.

Patrician Diamonds Incorporated's Dismal Lake West uranium property is located 400 km northeast of Yellowknife in the Hornby Bay Basin, near the eastern shores of Great Bear Lake. Triex Minerals Corporation conducted a seven-hole drilling program on the property in summer 2007. Results are not expected until February 2008.

Patrician's Sahtu project is focused around the Doctor Lake property, located 60 km north of Norman Wells. Work on the Sahtu project has comprised airborne magnetic surveys and auger drilling. There are several magnetic anomalies on the property and Patrician will now be moving forward with the permitting process to drill on the property in 2008.

Sanatana Diamonds Incorporated discovered kimberlite in 2007 on its Greenhorn property in the northwestern Northwest Territories. The company intends to take 750-1000 kg of split NQ size core from this kimberlite for caustic fusion analysis of the micro-diamond content. Drilling will also help determine the true size of the target and any geological complexity. Heavy mineral concentrate will also be taken from the core to verify that the indicator chemistry matches that in the indicator train.

Snowfield Development Corporation's Ticho project is located on the north shore of Great Slave Lake, approximately 55 km southeast of Yellowknife, and includes the diamondiferous Mud Lake kimberlite. The project consists of an approximately 16 000-ha (40 000-acre) claim group. Snowfield has two diamond drills committed to the Ticho project, where drilling will continue in 2008.

Snowfield announced in September that it had completed the crushing and bagging of a 500-t bulk sample from its Mud Lake kimberlite discovery. The crushed kimberlite is now being shipped to the De Beers Canada Exploration Limited's dense media separation plant in Grande Prairie, Alberta, for further processing.

Precious Metals

Tyhee Development Corporation continues to advance its major property, the Yellowknife gold project, located 90 km north of Yellowknife. Tyhee also holds several other properties stretching between the Giant mine property and the Yellowknife gold project.

In June 2007, Tyhee released an updated gold resource for the Yellowknife gold project integrating 477 diamond drill holes and 82 514 assays. The measured and indicated resources totaled 1 203 000 oz of gold with an inferred resource estimate of 353 000 oz.

Tyhee has completed two diamond drill holes totaling 259 m at the south end of a newly identified shear zone system on its BigSky property. Previously reported grab samples from surface exposures in the shear zone returned gold values up to 18 g/t. Tyhee is mobilizing another two drills to the property.

Avalon Ventures Incorporated's 100%-owned Thor Lake rare earth elements (REE) project is located about 5 km north of the Hearne Channel of Great Slave Lake and approximately 100 km southeast of Yellowknife.

Avalon completed 2551 m of delineation drilling over 16 holes on its Lake Zone deposit. The program concluded early in 2007 due to the arrival of winter conditions, but work will resume in January. Also, 1160 split core samples were submitted for assay, but no results have been released yet.

Base Metals

During the first half of 2007, Canadian Zinc Corporation continued a major underground exploration and infill drilling program at the Prairie Creek project, drilling 8217 m over 41 holes from six underground drill stations. The company is continuing to extend the decline tunnel and will establish an additional five drill stations; it will also support a helicopter diamond drill exploration program.

An NI 43-101-compliant resource estimate for Prairie Creek was released in October with total measured and indicated resources calculated at 5.8 Mt at >20% combined lead and zinc. Canadian Zinc is currently finalizing an application for a Class A Water Licence to re-open and operate the Prairie Creek mine.

Fortune Minerals Incorporated's NICO cobalt-gold-bismuth project is located 160 km northwest of Yellowknife. Proven and probable reserves of 21.8 Mt are suitable for a 15-year mine life with a production rate of 4000 t of ore per day.

In the Fall of 2007, Fortune completed Phase 2 of the underground test mining at NICO. Work included extending the ramp to a depth of 200 m below surface and the collection of a 3600-t ore sample, some of which will be used in a six-month-long, large-scale pilot plant test that began in October.

Fortune is moving ahead with preparations to relocate material, including the Golden Giant mill, from its Hemlo site in Ontario to NICO.

Kodiak Exploration Limited's polymetallic Caribou Lake property is located 90 km east of Yellowknife near the shores of Great Slave Lake. In 2007, the company continued to test the economic potential of the Caribou Lake gabbro intrusion. Since January 2007, 15 holes were completed ranging in length from 188 m to 966 m.

Tamerlane Ventures Incorporated holds a 100% interest in the Pine Point lead-zinc deposit east of Hay River. The company intends to develop a pilot project involving a one-million-ton bulk sample from the R-190 deposit. The project is undergoing an Environmental Assessment and is awaiting the Report of Environmental Assessment from the Review Board.

Strongbow Exploration Incorporated's 100%-owned Nickel King property is located approximately 550 km southeast of Yellowknife and 145 km northeast of Stony Rapids, Saskatchewan.

Seven drill holes completed in the property's Main zone extended the strike extent of mineralization by an additional 800 m to the southwest, bringing the total length of the mineralized zone to over 1600 m. In total, 19 drill holes have been completed on the property this year, and additional work included ground and borehole geophysical surveys, mapping, and prospecting of the project.

Uranium

Alberta Star Corporation's Contact Lake property is located 5 km southeast of Port Radium near Great Bear Lake. Work for 2007 included 30 000 m of drilling in 70-80 holes. In September, Alberta Star staked another four uranium claims totaling 4177 ha just west of its property.

Bayswater Uranium Corporation completed a 20 000-line-km airborne fixed-wing radiometric and magnetic survey on the west and southeast margins of its South Thelon basin holdings, with prelim-

inary results identifying 25 high-priority radiometric targets. As well, a 9500-line-km VTEM helicopter-borne geophysical survey was conducted in the central internal portion of the South Thelon basin. Follow-up exploration was conducted on historical radiometric anomalies and other targets.

In June 2007, Bayswater and Kilgore Minerals Ltd. agreed to a merger between the two companies. Bayswater retained its company name.

Ur-Energy Incorporated submitted an application to the Mackenzie Valley Land and Water Board for a uranium exploration program. This was referred to an Environmental Assessment. The Mackenzie Valley Environmental Impact Review Board recommended rejecting the project without an Environmental Impact Review and, in October, the Responsible Ministers decided to uphold the Board's recommendation.

Uranium North Resources Corporation completed detailed ground surveys over several targets on its Thelon UNR property, as well as 4250 line-km of airborne geophysics surveys. As well, the company collected 64 rock samples and conducted 21 000 line-km of airborne geophysics on its Hepburn property, east of Great Bear Lake.

Uravan Minerals Incorporated's Boomerang uranium project is located about 480 km east of Yellowknife along the southwestern margin of the Thelon basin. It is a joint exploration effort between Cameco Corporation and Uravan, where Cameco has an option to earn a 60% interest in the property. Work this year focused on continuing a widely spaced diamond drilling program along a major conductive trend on the property, with four holes completed and three more planned for the season.

Pacifica Resources Incorporated became Selwyn Resources Limited in June to reflect the company's focus on advancing the Selwyn zinc-lead project. Also known as Howard's Pass, this sizeable project is spread over a 40-km-long belt of favourable geology on the Yukon/Northwest Territories border.

Selwyn applied this year for a five-year land use permit to conduct a drilling program on its Northwest Territories claims, but the application has been referred to Environmental Assessment, which is now proceeding.



2.13 NUNAVUT²³

Introduction

Interest in Nunavut's mineral potential remained strong in 2007 with industry investing over \$260 million in exploration, an all-time high. The sustained level of commodity prices continues to drive exploration for diamonds, gold, base metals, nickel, platinum group elements (PGE), iron, and uranium.

Exploration activity is listed by region (Kitikmeot, Kivalliq, and Qikiqtani/Baffin) and by commodity. In the interest of space, only the more advanced projects are described herein. Full coverage of exploration projects is available in the *Nunavut Mining and Mineral Exploration Overview 2007*, which can be obtained from any of the agencies listed below.

Land Tenure in Nunavut

The territory of Nunavut was created in April 1999 as a result of the Nunavut Land Claims Agreement (NLCA), the largest land settlement in Canadian history. Nunavut spans 2 000 000 km² with a population of 30 000 people residing in 25 communities. Inuit represent 85% of the population. The Inuit culture is inherently connected to the land, shaping government, business, and daily life.

Under the NLCA, Inuit received fee simple title to 356 000 km² of land. There are 944 parcels (16% of Nunavut) of Inuit Owned Lands (IOL) where Inuit hold surface title only (surface IOL). The Government of Canada or "Crown" retains the mineral rights to these lands. Inuit also hold fee simple title, including mineral rights, to another 150 land parcels (subsurface IOL) totaling 38 000 km² or roughly 2% of the territory. Surface title to all IOL is held in each region by the respective Regional Inuit Association (RIA), while Inuit subsurface title (subsurface IOL) is held and administered by Nunavut Tunngavik Incorporated (NTI). NTI issues rights to explore and mine these lands through its own mineral tenure regime. Mineral rights (claims or leases) that pre-date the NLCA (grandfathered rights) continue to be administered by Indian and Northern Affairs Canada (INAC) until they terminate or until the holder transfers its interests to the NTI regime. For both surface and subsurface IOL, access to the land, through a Land Use Licence or Commercial Lease, must be obtained from the resident RIA.

The Crown owns mineral rights to 98% of Nunavut, which INAC administers through the Canada Mining Regulations (CMR). This includes surface IOL, for which access must be obtained from the appropriate Regional Inuit Association.

The NLCA is a final settlement of all land claims with the Inuit of Nunavut, thus providing an unmatched level of land tenure certainty. However, land claims for areas below the high-tide mark and on certain uninhabited islands in eastern Hudson Bay, as well as in the southernmost Kivalliq, continue to be negotiated with residents of northern Quebec and northern Manitoba, respectively.

Indian and Northern Affairs Canada

During 2006, an estimated \$210.6 million was spent by the exploration and mining sector in Nunavut. Based on Natural Resources Canada's survey, \$266.7 million in exploration expenditure is

²³ This overview is a combined effort of four partners: the Department of Economic Development and Transportation, Government of Nunavut; the Mineral Resources Division, Indian and Northern Affairs Canada; the department of Lands and Resources, Nunavut Tunngavik Incorporated; and the Canada-Nunavut Geoscience Office. For more information, please contact Eric Prosh (Government of Nunavut) by telephone at 867-975-7827 or by e-mail at eprosh@gov.nu.ca.

forecast for 2007. The overall number of hectares covered by some form of mineral tenure declined from 48.6 million hectares (Mha) in 2005 to 27 Mha in 2007 as explorers turned to more intensive and higher-cost field programs.

INAC administers mineral tenure on Crown land in Nunavut. This is done through the Nunavut Regional Office (NRO) in Iqaluit by the Mineral Resources Division and the Mining Recorder's Office (MRO) of the Land Administration Division.

The Mineral Resources Division of INAC:

- Participates in and provides technical advice for environmental reviews;
- Reviews assessment reports filed by mining and exploration companies to ensure compliance with the Canada Mining Regulations (CMR);
- Co-manages the Canada-Nunavut Geoscience Office (CNGO) together with Natural Resources Canada and the Government of Nunavut;
- Maintains a digital archive of assessment data filed in Nunavut dating back to the 1940s;
- Promotes mineral exploration within the territory through community outreach, publications, professional networking, and events such as Nunavut Mining Week; and
- Completes targeted geoscience research in conjunction with the CNGO and/or industry.

The MRO administers all other aspects of mineral tenure on Crown land in Nunavut. Administration of these rights is regulated by the CMR under the *Territorial Lands Act*. The MRO also administers coal tenure under the Territorial Coal Regulations. As well, the MRO sells claim maps, claim tags, and assists individuals and companies in interpreting the Canada Mining Regulations with information on how to keep their properties in good standing.

Government of Nunavut

The Government of Nunavut (GN), through the Department of Economic Development and Transportation (EDT), works in support of a strong and diversified minerals industry based on best practices of sustainable development and partnerships with Nunavummiut and industry. EDT's objective is to ensure that all Nunavummiut are able to benefit from opportunities, and that they have the option to become full participants in the development in the territory.

EDT is committed to working with its partners in NTI and the Government of Canada to make the legislative, policy, and regulatory environment of Nunavut efficient, internationally competitive, and attractive to investors. The recent interest in the territory demonstrated by major, multinational mining companies is a strong vote of confidence in Nunavut's mineral potential, its regulatory system, and the commitment of its people.

EDT has its headquarters in Iqaluit and Resident Geologist Offices in Arviat and Cambridge Bay.

Parnautit: The Nunavut Mineral Exploration and Mining Strategy

To maintain Nunavut's position as a jurisdiction of choice for mineral investment, the GN developed *Parnautit: The Nunavut Mineral Exploration and Mining Strategy*, which provides a framework of policies and actions to encourage mineral discovery and development. Formulation of the Strategy involved broadly based consultations across the territory. The Strategy addresses Nunavut's regulatory and taxation regimes, work force training, infrastructure development, and environmental baseline availability.

The Strategy was released in 2007, with work under way on areas of legislative renewal and regulatory reform, development of a policy on uranium, and community consultation guidelines. In cooperation with the Department of Education, new earth science curricula and new rock and mineral teaching kits are being distributed to all Nunavut schools. The government's strong commitment to public geoscience has been affirmed through new mapping programs, as has core funding for the annual Nunavut Mining Symposium. For more information, or to obtain *Parnautit*, consult www.edt.gov.nu.ca/parnautit.

Development Partnership Agreement

The Development Partnership Agreement (DPA) program was introduced in 2006 as a means of extending the territorial off-road fuel tax credit (rebate) to developing and producing mines. Through a DPA, the GN and operator work cooperatively in such areas as education and training, socio-economic monitoring and mitigation, and infrastructure development. Proponents entering the regulatory phase are encouraged to begin negotiations with the GN on a Development Partnership Agreement for their projects.

Nunavut Prospectors' Program (NPP) and Introductory Prospecting Course

EDT provides technical and financial assistance to Nunavummiut with demonstrated prospecting skills to carry out their own prospecting projects. The program has been in existence since 1999, and up to \$8000 in annual financial assistance is available per prospector. There are typically 15-20 projects funded annually in all regions of the territory.

Every year, EDT geologists present a six-day Introductory Prospecting Course to interested residents in communities throughout the territory. Since 2000, the course has been offered at least twice in each of Nunavut's 25 communities with well over 500 graduates to date. Graduates of the course often apply for NPP grants, and many now work as field assistants on mineral exploration projects.

Community Minerals Education and Training

EDT works with many other stakeholders, including the Department of Education, the Government of Canada, and the mining and exploration industries in a number of programs designed to inform Nunavummiut of all ages of the opportunities in the minerals industries.

Nunavut Tunngavik Incorporated

Nunavut Tunngavik Incorporated (NTI) is the Inuit corporation responsible for overseeing implementation of the NLCA. NTI's mandate is to safeguard, administer and advance the rights and benefits of the Inuit of Nunavut to promote their economic, social, and cultural well-being through succeeding generations. The Lands and Resources Department of NTI is responsible for the management of Inuit Owned Lands (IOL) and for stewardship of the environment, minerals, oil and gas resources, and marine areas.

There are two forms of mineral tenure to grant exclusive rights on subsurface IOL. These are the Inuit Owned Lands Mineral Exploration Agreement (referred to as the "Exploration Agreement," or "EA") and the Inuit Owned Lands Mineral Production Lease (the "Production Lease"). The EA grants a company or individual the exclusive right to explore and prospect for minerals (excluding oil and gas, and specified substances such as construction materials and carving stone) on a portion of subsurface IOL. This area, referred to as the Exploration Area, is similar to a mineral claim under the CMR. The Production Lease grants the holder of an EA the right to produce minerals from a portion of the Exploration Area known as the Production Lease Area.

NTI does not require staking when applying for an EA. The applicant must submit a completed application form (available on request from NTI). The completed application includes a description

of the proposed Exploration Area defined by boundary latitude and longitude, and a map of the proposed EA. Applications are kept confidential until the close of the application period in which they are received, ensuring that all applicants are treated fairly.

It should be noted that although the process and documents described here normally apply, NTI, as a private organization, has complete discretion on whether it will issue an Exploration Agreement (or other agreement), the process for obtaining an agreement, and the final terms of the agreement. The terms may include, for example, NTI holding a direct interest in a project.

Under the standard terms, successful applicants, upon executing the new Exploration Agreement and submitting the first year's annual fees, will be granted the exclusive right to explore for minerals on the Exploration Area. In order to gain access to the land, however, the applicant must obtain a surface right issued by the Regional Inuit Association (RIA). Holders of Exploration Agreements are required to submit annual exploration work reports to NTI that remain confidential for a period of up to three years.

NTI Uranium Policy

In September 2007, NTI approved a Uranium Policy to guide its decisions regarding proposed uranium exploration and mining projects on subsurface IOL and on NTI's regulatory submissions for projects on Crown land. NTI will support and allow uranium-related activities provided five requirements are met:

- The safe and peaceful use of nuclear energy;
- Benefits to Inuit from mining and exploration;
- Protection of human health;
- Limited negative impacts of exploration and mining; and
- Participation of Inuit in the environmental assessment and operation of uranium projects.

The full text of the uranium policy is available from NTI.

Canada-Nunavut Geoscience Office

The Canada-Nunavut Geoscience Office (CNGO) is a partnership between the GSC, INAC, and the GN. The mandate of the CNGO is to gather, interpret and disseminate geoscience data in support of responsible development of mineral and energy resources, to provide Geographic Information System (GIS) and cartographic expertise, to provide training opportunities for young geologists and Inuit, and to promote geoscience education. In 2007, the CNGO participated in multi-component field-based projects, funded a regional geophysical survey, was a principal partner in development and implementation of a web-based system of data delivery (*Nunavutgeoscience.ca*), provided GIS and cartographic support, and participated in outreach and community consultation activities.

CNGO Projects

CNGO projects are intended to improve the quality of life for Nunavummiut by allowing them to derive economic and social benefits resulting from responsible development of mineral and energy resources. The purpose of each project is to support exploration by providing new data and ideas intended to reduce geologic risk of investment and improve chances of discovery by industry. Projects are designed to address critical geoscience knowledge gaps, develop new geologic and exploration models, and make significant contributions to the understanding of Nunavut geoscience. The projects include bedrock and surficial mapping; geophysical, geochemical and geochronological

studies; and comprehensive data compilation. In addition, field-based projects include community consultation and public outreach activities. Outreach programs demonstrate the importance of mineral and energy resources, increase awareness of employment opportunities in geoscience, and promote earth science education for students.

SOUTHAMPTON ISLAND INTEGRATED GEOSCIENCE PROJECT (SIIG)

The SIIG project included regional-scale bedrock and surficial mapping in the central and eastern parts of Southampton Island. The area is underlain by supracrustal and intrusive rocks that may have potential for base-metal mineralization. In addition, the island may have diamond potential. As part of the SIIG project, central and eastern Southampton Island were covered by an aeromagnetic survey during the 2007 field season. Geophysical characterization of potential crustal- and lithospheric-scale structures by magnetotelluric and teleseismic studies (ongoing, multi-year studies) were carried out in 2007.

SIIG Bedrock Mapping (Precambrian Geology)

Field-mapping in 2007 covered over 15 000 km² at a scale of 1:250 000. The Precambrian geology of the central part of the island consists of a sequence of high-grade metasediments of presumed Paleoproterozoic age. The supracrustal rocks are cut by a layered, ultramafic-mafic plutonic suite including peridotite, gabbroic anorthosite, gabbro, and diorite. The supracrustal and ultramafic-mafic rocks are cut by voluminous, felsic plutonics with a variety of compositions and demonstrate, at least locally, that they were metamorphosed to granulite facies.

Northern Southampton Island is separated from the central domain by an east-west-striking shear zone, and consists of structurally complex, intrusive rocks with abundant mafic xenoliths. These are cut by younger monzonitic rocks. In the southwestern part of the island, a Precambrian inlier of metamorphosed mafic intrusives and tonalite lacks the granitic rocks common in the northern and central regions. The Precambrian architecture of the island appears to consist of a central high-grade block bounded by a lower-grade block to the north, and a potentially "exotic" block to the south. Geochronological and geochemical studies are in progress.

SIIG Surficial Mapping

Surficial mapping included examination of the glacial features of the island and reconnaissance-scale sampling of glacial and post-glacial sediments for kimberlite indicator minerals (KIM) and geochemistry. The samples consist mainly of subglacial till, but glaciofluvial and alluvial sediments were also sampled from eskers and alluvial bars, respectively. Most sampling was conducted in the area underlain by Precambrian bedrock. This area was largely unaffected by post-glacial marine reworking and, although physical weathering and other periglacial modifications are ubiquitous, small-scale glacial erosional forms, including glacial striae, roches moutonnees, whaleback forms and rock drumlins, are relatively abundant. This is especially evident along the north coast where Precambrian rocks form significant exposures. Fluted landforms over unconsolidated sediments are common in areas underlain by Paleozoic bedrock.

Work in 2007 suggests that a complex system of ice stream tributaries developed over the lowland portion of the island during deglaciation, whereas elevated parts of the island were much less connected to the regional glacial dynamics of northern Hudson Bay. This small portion of the Laurentide Ice Sheet was probably a local stationary dome that evolved into a remnant ice cap with small lobes in the main valleys before it completely vanished.

SOUTHAMPTON ISLAND AEROMAGNETIC SURVEY

Prior to 2007, Southampton Island was entirely lacking in aeromagnetic data. To address this gap and to provide guidance in bedrock mapping, an aeromagnetic survey was flown over central and

eastern Southampton Island in 2007. Results of the 46 000-line-km survey should be offered for public release early in 2008 as GSC open-file maps and data sets.

Boothia Mainland Project

As an ongoing project, 2007 fieldwork included bedrock and surficial mapping, representing northward continuation of work begun in 2005 (NTS 57A and B). In 2007, approximately 13 000 km² of NTS 57C and D were mapped at a scale of 1:250 000. The Boothia Mainland is being actively explored for diamonds.

The Boothia Mainland is part of the north-central Rae Domain of the Churchill Province. The study area is a high-grade gneissic terrain dominated by Neoarchean metaplutonic rocks, lesser Archean and Paleoproterozoic supracrustal sequences, and migmatitic gneiss. Several discontinuous belts of supracrustal rocks occur in the northern study area. The supracrustal belts consist of mafic to intermediate metavolcanic rocks, pelitic to psammitic paragneiss, and local iron formation. The supracrustal belts have exploration potential for base-metal mineralization. Gossanous rocks are common, and a metre-scale lens of massive sulphide was discovered in a granulite-facies host.

Reconnaissance-scale studies of the regional glacial history demonstrate that the four-stage glacial history inferred for the southern part of the project area (NTS 57A and B) is consistent across the northern part of the Boothia Mainland. Samples of till and from eskers are being analyzed for kimberlite indicator minerals.

Borden Basin Project

The Borden basin project is a collaboration between Laurentian University and the CNGO. The project (initiated in 2003) is intended to provide a regional context and new interpretations for base-metal mineralization in the Mesoproterozoic Milne Inlet graben. The project involves systematic investigation of all known zinc-lead-copper occurrences. The Society Cliffs dolostone hosts the Nanisivik zinc-lead deposit and numerous other base-metal showings. Understanding formational architecture and tectonostratigraphic history is essential to identifying controls on the distribution of base metals in this district.

Oil Shales of Southampton Island

The Paleozoic geology of Southampton Island is part of the northern margin of the Hudson Bay basin, one of the largest intracratonic basins in Canada. On Southampton Island, the Ordovician sequence includes occurrences of oil shale, although the exact stratigraphic position of these shales, their number, and regional extent have been poorly understood. In 2007, the oil shales of Southampton Island were systematically examined. This study is part of a larger-scale project to re-examine the hydrocarbon potential of the Hudson Bay basin.

WEB-BASED DATA DELIVERY: *Nunavutgeoscience.ca*

Publicly accessible geoscience information is a vital tool for exploration companies working, or planning to work, in Nunavut. Public geoscience information held in government offices assists companies in making strategic exploration and investment decisions. However, for geoscience information to have real value, it must be managed and available to a global client base.

To disseminate Nunavut geoscience information through one authoritative web site, the *Nunavutgeoscience.ca* project was initiated in October 2005. The project is a collaboration between the CNGO, INAC, Natural Resources Canada (NRCan), NTI, the Northwest Territories Geoscience Office (NTGO), and the GN.

Nunavutgeoscience.ca went on-line in September 2006 and currently operates a public web site (www.nunavutgeoscience.ca) hosting the NUMIN database (Nunavut Minerals Database reference query, Showings query, and Gateway applications), as well as connections to the CNGO web site and the national Geoscience Data Repository (GDR) hosted by NRCan. Users can link to Mirage (map data) via GDR, accessing Nunavut geoscience maps made available for download by the GSC and GEOSCAN, which is the bibliographic database for scientific publications of the Earth Sciences Sector of NRCan.

Summary of 2007 Exploration Activities

Kitikmeot Region

Junior mining companies have driven much of the exploration in Nunavut in recent years. However, in 2007, the major companies arrived in force. Zinifex, an Australian base-metal miner and one of the world's largest zinc and lead producers, acquired Wolfden Resources Inc. for \$388 million, taking over numerous zinc, copper and gold projects. Newmont Mining Corp. entered into a \$1.5 billion agreement with Miramar Mining Corp. to acquire all outstanding common shares and assume control of the Hope Bay gold properties. In June 2006, Cameco Corporation, the world's largest uranium producer, acquired 19.5% of UNOR Inc. and has maintained that interest.

The Kitikmeot is geologically diverse and, in 2007, there were over 60 active exploration projects. The commodities being sought include gold, diamonds, base and precious metals, and uranium. Past mines (Lupin, Ida Bay, Ida Point, Roberts Bay) in the western Kitikmeot have generally been small, with the exception of the Lupin mine, which produced over 3.1 million oz of gold from 1982 to 2005.

Production at the fully permitted Doris North gold deposit in the Hope Bay greenstone belt is expected by late 2008. The George and Goose lakes gold deposits are the focus of an active advanced exploration program.

Diamond exploration covered parts of the western mainland, and projects were active on Victoria and Prince of Wales islands. The Boothia Peninsula and areas south of Kugaaruk in the eastern Kitikmeot continued to have strong exploration activity with more kimberlites identified in this area again in 2007.

Advanced massive sulphide-hosted base-metal exploration projects in the Kitikmeot include Gondor, High Lake, Hood, Izok Lake (all base metals), and the Ulu gold deposit. The High Lake project is currently in the environmental assessment process. Exploration of the Hackett River silver-zinc deposit is advancing towards full feasibility.

Uranium exploration in the Hornby Bay basin continues with several exploration companies working on projects ranging from grassroots to advanced drilling programs.

The active projects referred to in the following review are shown in **Figure 42**.

KITIKMEOT BASE-METAL PROJECTS

High Lake

Zinifex Canada Inc. acquired Wolfden Resources outright in 2007. The High Lake copper-zinc-silver-gold deposit (175 km east of Kugluktuk) is the most advanced of all Zinifex's projects in Nunavut. Wolfden initially submitted the High Lake project proposal as a Draft Environmental Impact Statement in November 2006. An Environmental Review is under way and is expected to take 12-18 months to complete. Zinifex's current plan is to develop High Lake once an Izok Lake mine is completed, with possible first production therefore by 2016. Exploration will continue at High Lake to define additional resources.

Figure 42
Location of Active Projects in Nunavut, 2007



Figure 42 (cont'd)

ID	Projet	Commodity	Operator
EXPLORATION PROJECTS IN THE KITIKMEOT REGION			
1	Amaruk	Diamond	Diamonds North
2	Anialik	Au	North Arrow Minerals
3	Anialik	Cu-Pb-Zn	North Arrow Minerals
4	Asiak River	U	UNOR
5	Barrow	Diamond	Indicator, Hunter Exploration Group
6	Bathurst Inlet	U	Rockgate Capital
7	Bear Valley	U	Adriana, UNOR
8	Blue Lake	Diamond	North Arrow Minerals
9	Boston	Au	Miramar (Newmont)
10	BRSC-WM	Diamond	Nordic Diamonds
11	Canoe Lake	Au	North Arrow Minerals
12	Canoe Lake	Cu-Pb-Zn, Au	North Arrow Minerals
13	Chartrand Lake	Diamond	De Beers Canada, Pure Diamonds Exploration
14	Chicago	Au	Maximus Ventures, Miramar (Newmont)
15	Coppermine	U	UNOR
16	Corhill	U	Garuda Capital
17	Darby	Diamond	Teck Cominco, Indicator Minerals, Hunter Exploration
18	Dismal Lake Property	U	Triex Minerals, Pitchstone Exploration
19	Dismal Lake West	U	Triex Minerals, Pitchstone Exploration
20	Doris	Au	Miramar (Newmont)
21	Eagle	Au	North Arrow Minerals
22	George Lake	Au	Dundee Precious Metals
23	Gondor	Cu-Pb-Zn	Zinifex, Xstrata
24	Goose Lake	Au	Dundee Precious Metals
25	Grail (Sanagak, Mayo)	Diamond	Indicator Minerals, Hunter Exploration Group
26	Hackett River	Ag-Zn	Sabina Silver
27	Heequo	Diamond	Diamondex Resources
28	Hepburn	Diamond	Diamonds North Resources
29	High Lake	Cu-Zn	Zinifex
30	Hood	Cu-Zn	Zinifex
31	Hood River	Cu-Pb-Zn	Golden River Resources
32	Hood River Claims	Diamond	Tahera
33	IC	Diamond	Diamondex Resources, Stornoway
34	Inuk	Au	Committee Bay Resources
35	Izok	Zn-Pb-Cu	Zinifex
36	Jericho diamond mine	Diamond	Tahera/Teck Cominco
37	Kendall River	U	Triex Minerals, Pitchstone Exploration
38	Lac Rouviere	U	UNOR, Cameco
39	Lach	Au, Cu	Kaminak Gold
40	Lupin	Au	Zinifex
41	Madrid	Au	Miramar (Newmont)
42	MIE	Ni-Cu-PGE	Adriana Resources
43	Mountain Lake, Mtn. Lake Option	U	Triex Minerals, Pitchstone Exploration
44	Muskox	Ni Cu-Co-PGE	Silvermet, Prize Mining
45	Napaktulik	Cu-Pb-Zn	North Arrow Minerals
46	Needle Gold, BR	Au	Kaminak Gold, TerraX Resources
47	Northern Hepburn	U	Uranium North Resources
48	Oro (Hope Bay Project)	Au	North Arrow Minerals
49	Peregrine	Diamond	Diamondex Resources, Stornoway
50	Polar Project - Muskox	Diamond	Tahera, De Beers
51	Regan Lake	Au	North Arrow Minerals
52	Rockinghorse - Anuri	Diamond	Tahera, De Beers
53	Sakari	Diamond	Diamonds North Resources, Shear Minerals
54	Siku	Diamond	Diamonds North Resources, Arctic Star
55	Silvertip	Au-Ag	North Arrow Minerals
56	Three Bluffs	Au	Committee Bay Resources
57	TIM	Diamond	Diamondex, Stornoway, Committee Bay Resources
58	Twin Peaks, Discovery	Au	Maximus Ventures, Miramar (Newmont)
59	Ualliq	Diamond	Diamonds North Resources, International Samuel
60	Ulu	Au	Zinifex
61	UNAD	U	UNOR, Adriana Resources
62	Victoria Island	Diamond	Diamonds North Resources
63	Washburn Uranium	U	Kaminak Gold
64	Yava	Ag-Zn	Savant Explorations

Figure 42 (cont'd)

ID	Project	Commodity	Operator
EXPLORATION PROJECTS IN THE KIVALLIQ REGION			
65	Aberdeen	U	Cameco, De Beers
66	Amer Lake	U	Uranium North Resources
67	Amer Lake East	U	Bayswater Uranium
68	Amer Lake West	U	Bayswater Uranium
69	Anuri	Au	Committee Bay Resources
70	Baker Basin	U	Pacific Ridge Exploration, Kaminak Gold
71	Baker Property	U	Uranium World Energy, Majescor Resources, De Beers
72	Bugs	U	Ur-Energy Inc
73	Central Kiggavik	U	Bayswater Uranium
74	Churchill (K)	Au, Ni	Kaminak Gold
75	Churchill (S)	Diamond	Shear Minerals, Stornoway
76	Churchill West	Diamond	Shear Minerals, International Samuel, Stornoway
77	Ferguson Lake	Pt-Pd-Ni-Co-Cu	Starfield Resources
78	Garry Lake	U	Uravan Minerals
79	Greyhound Property	Ag-Zn-Pb	Intrepid Mines, Aura Silver
80	Hawk (South Baker Project)	U	Uranium North Resources
81	Hyde	Diamond	Stornoway
82	Itza Lake	U	Bayswater Uranium
83	Itza Lake Property	Diamond	Stornoway, Bayswater Uranium
84	JG	U	Uranium North Resources
85	Kam	U	Uranium North Resources
86	Keewatin	Zn, Ag, Au, U	Tri Origin Exploration, BHP Billiton
87	Kiggavik	U	AREVA Resources, DAEWOO
88	Kiggavik North	U	Forum Uranium, Superior Diamonds
89	Kiggavik South	U	Forum Uranium, Superior Diamonds
90	Kiyuk Lake	Au	Newmont, M. Haseux, S. Surmacz
91	Matrix Gold	Au	Kaminak Gold
92	Maze Lake	Au	Terrane Metals, Laurentian Goldfields
93	Meadowbank	Au	Agnico-Eagle Mines
94	Meliadine East	Au	Resource Capital Funds, Comaplex Minerals
95	Meliadine West	Au	Comaplex Minerals, Resource Capital Funds
96	Mum Claims	Ni-Pt-Pd	Cascadia International Resources, Tanqueray
97	Nanuq	Diamond	Peregrine Diamonds,
98	Nanuq North	Diamond	Indicator Minerals, Peregrine Diamonds
99	Napajut Property	Au	Exploratus
100	North Thelon 1	U	Bayswater Uranium, Strongbow Exploration
101	North Thelon 2	U	Bayswater Uranium, Strongbow Exploration
102	Nuelin Lake	U	Cameco
103	Pitz Lake	Diamond	Kennecott
104	Rainbow Claims	Ni, Au	Xstrata
105	Raven	Au	Committee Bay Resources
106	Rebel Permits	U	Hinterland Metals
107	Ruby Hill	U	Western Energy
108	Sissons Property	U	AREVA Resources, JCU Exploration, DAEWOO
109	Southwest Kiggavik	U	Bayswater Uranium
110	St. Tropez Claims	U	AREVA Resources
111	Sy	Au	Kaminak Gold
112	Tanqueray Option	U	Forum Uranium, Superior Diamonds, Tanqueray
113	Target 87	Diamond	BHP Billiton
114	Thelon Basin	U	Titan Uranium, Mega Uranium
115	Turqavik	U	Cameco
116	West Plains	Au	Committee Bay Resources
117	Yankee Permit	U	Hinterland Metals
118	Yathkyed	Au, U, Cu	Kaminak Gold
119	Yathkyed Lake	U	Uranium North Resources
EXPLORATION PROJECTS IN THE QIKIQTANI/BAFFIN REGION			
120	Aviat	Diamond	Stornoway, BHP Billiton, Hunter Exploration Group
121	Baffin Island	Diamond	De Beers Canada, Pure Diamonds Exploration
122	Baffin Island Gold	Au	Commander Resources, BHP Billiton, Xstrata, NTI
123	Baumann Project	Diamond	Stornoway, Indicator
124	Beluga	Sapphires	True North Gems
125	Borden (I)	Diamond	Indicator, Committee Bay Resources
126	Borden (P)	Diamond	Patrician Diamonds
127	Borden Basin	U	UNOR, Cameco

Figure 42 (cont'd)

ID	Project	Commodity	Operator
EXPLORATION PROJECTS IN THE QIKIQTANI/BAFFIN REGION (cont'd)			
128	Brodeur	Diamond	Diamonde Resources, Kennecott
129	Brodeur Diamond	Diamond	Atlanta Gold
130	Cape Osborne	Diamond	De Beers, Pure Diamonds Exploration
131	Chidliak	Diamond	Peregrine Diamonds, BHP Billiton
132	Cornwallis Island	Diamond	De Beers, Pure Diamonds Exploration
133	Dorset	Diamond	Indicator Minerals
134	Foxe Basin	Diamond	Peregrine Diamonds, BHP Billiton
136	Fury/Hecla Basins	U	UNOR, Cameco
137	Mary River	Fe	Baffinland
138	Mirage Bay	Diamond	Peregrine Diamonds, BHP Billiton
139	Muskox Hill	Diamond	De Beers, Pure Diamonds Exploration
140	Nanisivik Mine	Pb-Zn-Ag	Canzinc (Breakwater Resources)
141	Nunavut Coal Prospect	Coal	West Hawk Development
142	Polaris	Zn-Pb-Ag	Teck Cominco
143	Qilalugaq	Diamond	Stornoway, BHP Billiton
144	Roche Bay	Fe	Advanced Exploration, Roche Bay plc
145	Strand Fiord Coal	Coal	James Bay Energy, First Nephi International
146	Timmijuuq	Diamond	Peregrine Diamonds

Source: Minerals and Petroleum Resources Division, Government of Nunavut.

The High Lake property consists of 15 leases (1710 ha) located mainly on subsurface IOL. A preliminary assessment (June 2006) identified a resource of 17.2 Mt grading 2.25% copper, 3.35% zinc, 69.75 g/t silver, and 0.95 g/t gold. Mineralized zones are the AB, D, and West zones, Sand Lake, the WW zone, and the Cairo zone. Should this deposit be developed, a 14-year mine-life is forecast under the present plan. Three orebodies would be developed, with the first two zones (A/B and D) mined by open pit, followed by underground operations. The third zone (West zone) would be mined underground. Approximately 18.2 Mt of ore will be mined over the life of the mine, with roughly one quarter open-pit and the remainder from underground workings.

Izok Lake

Izok Lake (275 km south of Kugluktuk) is one of the highest-grade undeveloped copper-zinc deposits in the world with an *in situ* value per tonne of ore comparable to Zinifex's Rosebery mine in Australia. The Izok Lake deposit is in the pre-feasibility stage of development with current resources of 14.8 Mt and zinc and copper grades of 12.8% and 2.6%. Further exploration is expected to increase the resource.

The Izok Lake massive sulphides occur within Archean volcanics of the Slave Craton. These near-surface deposits are hosted within a thick sequence of felsic pyroclastic, volcanoclastic, dacitic and basaltic flows, interlayered with sulphide-rich iron formations and greywackes. The felsic volcanics are intruded by dacite and gabbro dykes, both of which feed the overlying flows.

Studies of options for port and road locations, along with potential tailing locations, have begun and will lead to a pre-feasibility study expected in 2008. Environmental baseline studies have commenced as part of the permitting process, and these will be incorporated into an Environmental Impact Statement expected to be submitted by 2010. First concentrate production could occur in 2014 if the development schedule proceeds as planned. At a production rate of 1.4 Mt/y, Izok Lake will produce approximately 140 000 t of zinc and 30 000 t of copper concentrates.

KITIKMEOT DIAMOND PROJECTS

Amaruk

Located in the Pelly Bay diamond district in the eastern Kitikmeot Region (45 km south of Kugaaruk), Diamonds North Resources Ltd.'s Amaruk property covers approximately 1.5 Mha. Abundant indicator mineral and kimberlite float occurrences span an area of approximately 80 km². In 2007, there were 17 new kimberlite discoveries on the property. These additional kimberlites bring the total number on the property to 22 and suggest the potential for clustering of kimberlites regionally. Approximately 500 identified targets remain untested in this kimberlite field, which bulk sampling has shown to be diamond-bearing.

Darby

The Darby project currently consists of approximately 480 000 ha of claims and permits located 120 km southwest of Kugaaruk. Teck Cominco Ltd. is the operator with an \$8.5 million budget for 2007. The 2007 exploration program included the acquisition of more than 16 000 line-km of detailed airborne geophysical data and the collection of 986 till samples. A preliminary interpretation of the data has identified several high-priority targets for drill-testing in 2008. Drilling during 2007 discovered four new kimberlites, increasing the total number on the property to nine. Three of the new kimberlites are diamondiferous. A total of 32 new targets were drilled. One hole was drilled into the diamondiferous Iceberg kimberlite, targeting a large untested zone.

Jericho Diamond Mine

In 2006, Tahera Diamond Corporation opened the Jericho mine, the first diamond mine in Nunavut. In 2007, Tahera increased its production grade to approximately 0.90 ct/t, with a value of production for the second quarter of 2007 at \$6.9 million. Production reached its peak in October, with 55 000 t processed at an average grade of 0.85 ct/t, yielding 47 000 ct. However, financial losses were incurred by the mine with contributing factors including operational difficulties, appreciation of the Canadian dollar, higher oil prices, and elevated transportation costs due to early closure of the ice road in 2006. The company has adopted a comprehensive financing and improvement plan to mitigate its losses.

KITIKMEOT URANIUM PROJECTS

Coppermine

UNOR Inc.'s Coppermine property (100 km south of Kugluktuk) in the Hornby Bay basin consists of two blocks, the Coppermine Block and the East Block, with 226 claims and leases covering 126 100 ha. The company has invested \$27.6 million since 2003.

In 2007, 22 holes (6317 m) were drilled from which 419 core samples were assayed; results are pending. Geophysical work was completed over magnetic targets on the claims, including electromagnetic (EM) surveys completed over four conductors on the property. Under a technical agreement with Cameco, the two companies are processing the geophysical data to identify uranium drill targets. On the Coppermine, Lac Rouviere, and UNAD properties, 30 000 km of airborne gamma-ray/magnetometer survey at 150-m line-spacing were flown in 2007.

Dismal Lake/Mountain Lake Properties

Triex Minerals Corporation and Pitchstone Exploration Ltd. recently announced the formation of a joint venture for their four properties (100 km southwest of Kugluktuk) in the Hornby Bay basin. The properties combined total 223 000 ha and include the Mountain Lake uranium occurrence.

The Triex-Pitchstone joint venture has also purchased the 4180-ha Kendall River property. Surface work on the property in 2006 and 2007 defined targets related to a train of radioactive boulders discovered in the 1970s. A total of 145 radioactive boulders (containing disseminated uranium oxide minerals with minor pyrite and chalcopyrite) form a confined northeast-trending train 3400 m long and up to 230 m wide. A regional structure parallels the train immediately to the south. Work during 2007 included 388 line-km of airborne radiometrics flown at 200-m spacing, 124 line-km of ground magnetics at 200-m spacing, and 1200 soil samples collected on 200-m line-spacing. On the Dismal Lakes and Dismal Lakes West properties, 2040 soil samples were taken and 19 holes were drilled. No continuous zones of significant radioactivity were encountered. Geophysical surveys included 140 line-km of resistivity, 730 line-km of airborne radiometrics flown at 200-m spacing, and 100 line-km of ground magnetics at 200-m spacing. Prospecting, mapping, resistivity surveys, and preliminary baseline environmental studies, including aquatic and wildlife surveys, were also conducted.

KITIKMEOT GOLD PROJECTS

Committee Bay

The Committee Bay greenstone belt (north of Baker Lake) is over 300 km long. Committee Bay Resources Ltd. holds over 85% of the belt, with a 360 000-ha land package. More than 40 zones with gold potential have been recognized in the belt. The Three Bluffs deposit, hosted within a folded iron formation near the centre of the belt, is considered the most promising. A near-surface high-grade inferred mineral resource of 1.9 Mt at 8.0 g/t gold (for 487 000 contained oz) has been defined for Three Bluffs. Using a 4.0-g/t cut-off, the inferred mineral resource converts to 5.1 Mt (for 657 000 oz gold). About 85% of the resource is within 120 m of surface.

As part of a \$5.5 million program, a total of 4546 m (27 holes) were drilled in 2007. The main objective in 2007 was to confirm the width and grade continuity of Three Bluffs and to upgrade the current inferred resource.

George Lake/Goose Lake (Back River Project)

Dundee Precious Metals Inc.'s Back River project (100 km south of Bathurst Inlet), covering 390 km², is one of the larger gold projects in Nunavut. The Back River gold deposits are quartz-vein hosted, found within deformed Archean banded iron/greywacke lithologies.

Recently updated resource estimates for Back River are: indicated resources of 3.415 Mt at 10.9 g/t gold (1.193 million oz of gold), and inferred resources of 3.555 Mt at 10.2 g/t gold (1.161 million oz of gold). These new resource estimates represent a 14% increase in resource tonnage and a 19% increase in contained gold. The priority area for 2007 drilling was George Lake, where 26 holes (10 473 m) at 200-m and 100-m spacing were drilled along 1.4 km of strike.

Hope Bay

The Hope Bay project (130 km southwest of Cambridge Bay) covers most of the Archean Hope Bay greenstone belt, one of the most prospective undeveloped gold belts in Canada. The project consists of mineral claims, mineral leases, and IOL Exploration Agreements, for a combined total area of 110 151 ha. The Hope Bay belt runs 80 km north-south by 7-20 km wide in the northeast portion of the Slave Province.

Significant lode gold deposits along the belt include Doris, Madrid and Boston. All deposits and showings occur within or near major structural zones. The current total resource (indicated and inferred) is estimated at 10.7 million oz of gold, of which 3.0 million oz are from the high-grade Doris and Boston deposits (at 4.0- to 8.0-g/t cut-offs) and 7.7 million oz from the low-grade resource at Madrid (1.5-g/t cut-off).

The Hope Bay project is 100% controlled by Miramar Mining Corporation. In October, Newmont Mining Corporation made a \$1.5 billion cash offer to acquire all outstanding common shares of Miramar. The deal is expected to be finalized by year-end 2007. Newmont had previously held a 10% interest in Miramar (from 2005).

Hope Bay was again the focus of one of the largest exploration programs in Nunavut, reporting mid-year spending of over \$39.6 million, including \$8.2 million for engineering and environmental studies related to potential development beyond the Doris North mine plan. The Doris deposits (Doris North, Doris Central, Doris Connector) occur at an inferred inflexion in the Hope Bay structural break. Measured and indicated resources are 1.2 Mt at 19.3 g/t gold (726 000 contained oz) and inferred resources are 1.6 Mt at 14.5 g/t gold (766 000 contained oz). The Doris North project is currently in the final stages of permitting with a scheduled opening by late 2008. Site preparation for the Doris mine continued in 2007 with the mobilization of construction materials, equipment and plant facilities.

In the Madrid area, gold mineralization is structurally controlled by a complex, 11-km zone exhibiting intense strain and alteration. Most of the resource lies within the northern 2 km of this zone. The Boston deposit is located near the south end of the belt and is associated with a flexure in the Hope Bay structural break. Work was undertaken in 2007 to remodel the Boston resource utilizing a 1.5- to 2-g/t cut-off grade, instead of the existing 5-g/t model, to evaluate Boston's potential as an open pit. The current Boston resource is 2 312 000 t of 10.7 g/t gold indicated and 2 431 000 t of 9.5 g/t gold inferred. Close to 59 000 m of drilling (210 holes) were completed by mid-fall at Hope Bay, resulting in the expansion of two of the deposits in the Madrid system and one in the Boston system, as well as the completion of a significant regional exploration program testing the highly prospective geology of the Madrid trend.

KITIKMEOT NICKEL-COPPER-PGE PROJECTS

MIE (Muskox Intrusive Event)

Adriana Resources Inc. increased its land holdings over the Muskox Intrusion. The Mackenzie Igneous Event (MIE) project (90 km south of Kugluktuk) covers over 630 km² and consists of two properties: McGregor Lake and All Night Lake. The Muskox intrusion is a layered mafic intrusion associated with the Coppermine volcanics and the Mackenzie dyke swarm, which together comprise the Mackenzie igneous event. Similar layered intrusive complexes host large, rich nickel-copper-PGE deposits, such as the giant Noril'sk Complex in Siberia. The economic potential of the Muskox intrusion was first recognized in the 1950s by Inco Limited while exploring for native copper in the Coppermine area. Since then, various companies have spent more than \$20 million on exploration. High-grade copper, nickel and PGE occurrences were historically sampled along the walls of the Muskox intrusion.

The McGregor Lake property is centred over a part of the intrusion where highly anomalous nickel-copper-PGE mineralization occurs in the walls. The southern part of the property is situated over a major northwest-trending structural corridor that intersects the base of the intrusion. Adriana believes the base of the intrusion may represent a corridor for massive sulphide mineralization of copper, nickel, platinum and palladium, similar to the Noril'sk model.

The All Night Lake property occurs within the layered series and roof zone of the intrusion, and is being explored for chromitite-PGE reef-style mineralization, similar to the South African Bushveld Complex. This zone has not been explored thoroughly in the past, partly because of poor exposure.

Adriana's 2007 program focused on the All Night Lake property and three target areas: All Night Lake, Pointer Lake, and Tabb Lake. Two holes (600-800 m in length) were drilled down-dip to test the extent of mineralized nickel-copper-PGE intersections. One hole intersected a 14-m zone of disseminated sulphide mineralization in the top half of a 65-m-thick magmatic unit. The zone, 30 m

above the footwall contact with country rock, included a 6-m interval with an average grade of 0.47% nickel, 1.12% copper, 1.46 g/t palladium, 0.13 g/t platinum, and 0.13 g/t gold. These results are interpreted as significant in identifying a new zone of mineralization near the keel portion of the Muskox intrusion.

KITIKMEOT POLYMETALLIC PROJECTS

Hackett River

The Hackett River silver-zinc property (100 km south of Bathurst Inlet) is considered to be one of the largest undeveloped VMS camps in Canada. The property hosts at least eight known massive sulphide zones. Sabina Silver Corp. holds nine mining leases for an aggregate area of 12 250 ha. All deposits and showings are hosted at approximately the same stratigraphic interval and occur over a 6-km strike length. In March 2007, Wardrop Engineering completed a Preliminary Economic Assessment for Hackett River, estimating an annual production of 324.7 million lb of zinc, 12.4 million oz of silver, 20.7 million lb of copper, 37.0 million lb of lead, and 17 200 oz of gold over a 13.6-year mine life.

Since 2004, Sabina has drilled approximately 59 000 m (223 holes) at Hackett River. A 2007 budget of \$15.0 million included exploration and infill drilling for a total of 17 590 m (65 holes). The majority of this drilling concentrated on upgrading inferred mineral resources to indicated status. Highlights from 2007 include a 57.2-m intersection (from surface) of 16.8% zinc and 4.1 oz/t silver at the Main Zone West. Other work included metallurgical testing and optimization, and geophysical surveys.

Kivalliq Region

Past producing mines in the Kivalliq region include the North Rankin nickel mine at Rankin Inlet and the Cullaton/Shear Lake gold mine north of Nueltin Lake.

In 2007, the number of grassroots projects in the region increased, and interest in properties with known mineral occurrences was renewed. Established gold, diamond and nickel exploration projects in the Kivalliq region were augmented by new uranium projects. Of the 53 exploration properties in the region, 26 are under evaluation for their uranium potential and 2 more with uranium-base metals associations are being evaluated. Most of the uranium exploration is occurring in Proterozoic sediments of the Thelon basin.

Early in 2007, Agnico-Eagle Mines Ltd. announced it had entered into an agreement with Cumberland Resources Ltd. to acquire all outstanding and fully diluted common shares of Cumberland. The exchange was completed on July 9, 2007, placing a value of \$710 million on Cumberland. Agnico-Eagle continued 2007 exploration in the immediate area of the known Meadowbank gold deposits. New drilling revealed ore-grade intercepts over mineable widths outside of the currently known reserve and resource envelope. In addition, Meadowbank continues advancing through the regulatory process to secure a water licence for mining operations. Technical meetings and public hearings related to the water licence application are expected in 2008. Gold production is expected to begin in 2010.

Cameco Corporation, the world's largest uranium producer, acquired a 10% equity interest in Western Uranium Corporation (WUC), forming a strategic alliance covering all WUC properties, including those in Nunavut.

Diamond exploration efforts continued to produce encouraging results: three new kimberlite pipes were discovered on the Nanuq property and 31 new kimberlite occurrences were discovered on the Churchill property. A 5.43-ct diamond was recovered from the Kahuna dyke during bulk-sampling.

Nearly 40 projects were active in the Kivalliq region in 2007.

KIVALLIQ DIAMOND PROJECTS

Churchill, Churchill West

Shear Minerals Ltd. and Stornoway Diamond Corp. operate the Churchill and Churchill West properties, just north of Rankin Inlet. Since 2003, more than 50 kimberlites have been discovered in this large land package, including four diamondiferous dykes. The 2007 program focused on the Churchill property, with continued exploration of new promising indicator mineral trains and geophysical anomalies, and evaluation of four dykes. Results suggest the bodies are diamond-bearing, vertically emplaced dykes. The dykes are up to 4 m wide, variably long, and have returned sample grades up to 2.18 ct/t.

Thirty-one new kimberlite discoveries were made on the Churchill property in 2007. Fifteen were intersected in drill core; three of these are believed to have high diamond potential, occurring at the heads of separate G10 pyrope mineral trains. Prospecting resulted in 16 new kimberlite discoveries in either outcrop or sub-crop.

The Kahuna kimberlite is a 2.8- to 4-m-wide vertical dyke traceable over 5.5 km from geophysical evidence. A 400-t mini-bulk sample was collected from three surface pits along the Kahuna dyke in 2007 to establish preliminary grade and assess diamond value. Processing of the sample has been completed and diamond recovery is currently under way with promising preliminary results.

High-resolution geophysical surveys were also conducted over G10 pyrope corridors to assist with target identification and drilling. Additionally, 51 auger holes were completed in the Josephine River Corridor to trace pyrope dispersal in fluvio-glacial deposits; most contained visible kimberlite fragments.

Nanuq

The Nanuq property consists of 144 mineral claims (300 km north of Rankin Inlet) covering 146 552 ha. Peregrine Diamonds Ltd. has been exploring Nanuq since 2005 and, in 2007, commenced drilling three magnetic anomalies, resulting in the discovery of three diamondiferous kimberlite pipes. Twelve holes totaling 2500 m were completed with kimberlite intersections ranging from 59 to 248 m. Ten other magnetic anomalies on the property have yet to be drilled.

A total of 1632 kg of kimberlite from the three pipes were processed for microdiamond recovery via caustic fusion. Microdiamond results from 1319 kg of kimberlite have been received and results show that two of the pipes are diamondiferous, while those for the third pipe are pending. The pipes range in size from one to seven hectares.

KIVALLIQ URANIUM PROJECTS

Kiggavik (Includes Sissons)

The Kiggavik project (75 km west of Baker Lake) consists of mineral leases in the Thelon basin where potentially economic uranium mineralization has been identified. The project includes two properties: Kiggavik and Sissons. Ownership of the project is through a joint venture between AREVA Resources Canada Inc. (as operator), Japan-Canada Uranium (JCU) Exploration Company Ltd., and Dae Woo International Corp.

Three ore zones are present in the Kiggavik area and two ore zones are at Sissons. The Kiggavik ore zones occur about 2 km south of the fault contact between Thelon sandstone and basement metasediments. Structurally, Kiggavik is situated between two regional fault zones: the Thelon fault to the north and the Sissons fault to the south. The Sissons deposits, located 15-17 km southwest of Kiggavik, include some gold and platinum in addition to uranium. The Kiggavik project has a resource of approximately 57 000 t of uranium (148 million lb U_3O_8) at an average grade of 0.24% U_3O_8 .

The project had been under care and maintenance from 1997 until 2007 when licences and permits were granted by INAC, the Nunavut Water Board, and the Kivalliq Inuit Association to conduct further exploration activities and environmental baseline studies. Because of the increased uranium price, AREVA initiated a viability study of the project in 2006; results are expected in 2008.

The 2007 program included upgrading the Kiggavik exploration camp, drilling in the area of the Kiggavik and Sissons deposits, and environmental baseline studies. Drilling was designed to facilitate waste rock and ore handling, geotechnical logging, hydraulic testing, and permafrost monitoring. Environmental studies involved sampling of soil, surface water, and vegetation, and archaeological and caribou surveys.

Ruby Hill

Western Uranium Corp. has exploration rights on nine prospecting permits covering 143 670 ha, located along the north and northeast edge of the Thelon basin (200 km northwest of Baker Lake). The 2007 program followed up on an airborne transient electromagnetic survey flown in 2006.

Two areas containing conductive geophysical responses were covered by 120 line-km of transient electromagnetic (TEM) ground survey. Another 32 lines of moving loop TEM were employed to evaluate and define a 10-km-long EM anomaly. The ground survey defined a string of discrete conductive zones 50-200 m wide and up to 1 km long over a cumulative strike length of 7.5 km.

Follow-up drilling was conducted along the contact between the Thelon formation and underlying metasediments (Amer group). Samples from four holes drilled into an EM anomaly returned highly anomalous uranium and nickel values, as well as associated base metals, with uranium values of up to 443 ppm. The anomalous uranium and pathfinder element values occur in discrete 0.5- to 2.5-m zones within sandstones. A soil geochemical sampling program utilizing the adsorbed soil, gas, hydrocarbons (SGH) technique was undertaken over portions of the project. Results from both the drill and soil sampling programs are pending.

Thelon Basin

Mega Uranium Ltd. and Titan Uranium Inc. entered into an agreement whereby Mega will acquire a 51% interest in all of Titan's current and future claims in the Thelon basin. To earn the interest, Mega has committed to spend \$5 million in exploration work on the Thelon basin properties (150 km northwest of Baker Lake) by the end of 2008. Titan operated the 2007 field program, and Mega will operate the 2008 program. Upon meeting the expenditure requirements, the companies intend to form a joint venture for the purposes of future exploration. The 2007 summer program included completion of an airborne magnetic-radiometric survey, claim staking, prospecting, radon surveys, and diamond drilling. A total of 61 claims (48 748 km²) were acquired to cover areas with favourable geology; several radiometric anomalies were identified on the new claims. Prospecting was carried out to characterize several uraniferous boulder trains discovered previously. In addition, radon surveys were completed in selected areas to define drill targets. Twenty-three drill holes were completed during the summer drilling campaign for a total of 1600 m.

KIVALLIQ GOLD PROJECTS

Meadowbank

Agnico-Eagle Mines Ltd. completed its takeover of Cumberland Resources, and the Meadowbank project, in July. Four gold deposits occur along the Meadowbank trend (75 km north of Baker Lake). The known resources occur within 225 m of surface, making the project amenable to open-pit mining.

Meadowbank has proven and probable reserves of 2.9 million oz (21.3 Mt grading 4.2 g/t gold). Since Agnico-Eagle assumed control, the exploration focus has been a resource-to-reserve conversion around the pit shell, and further exploration around recent high-potential discoveries. Drilling has been focused along the main 3-km Meadowbank trend, exploring for potential extensions and new mineralized zones. Mineral resource envelopes in or near open-pit reserves at the Portage and Goose Island zones are being drill-tested.

The current mine plan calls for mining three of the four deposits. The Goose Island and Portage deposits are hosted in highly deformed, magnetite-rich iron formation, while in the more northerly Vault deposit, most of the mineralization is hosted in intermediate volcanics. A zone of high-grade, near-surface gold mineralization, the Cannu zone, was discovered and evaluated by the 2005 and 2006 drilling programs. An indicated gold resource at Cannu of almost 100 000 oz has been estimated abutting the northern limit of the main Portage pit; however, the resource is not in the current mine plan. In all of the deposits, gold mineralization is commonly associated with intense quartz flooding and iron sulphides (pyrite and/or pyrrhotite).

Overall, 2007 drilling suggests continuous gold mineralization over 3.5 km spanning the Cannu, Portage, North Portage, Portage Bay Island, Goose South, and Goose Island zones. The expanding mineralized envelope and the higher-grade intersections possibly imply a longer mine life and improved economics as the results are incorporated into the existing operating plan. Results from the 2007 exploration program will be integrated into an updated feasibility study. Initial gold production is anticipated by 2010. Annual gold production is estimated at 400 000 oz for the first four years and 350 000 oz per year averaged over the life of the mine.

Meliadine West

Comaplex Minerals Corp.'s Meliadine West property is located 25 km northwest of Rankin Inlet. The largest mineral resource on the Meliadine West property is the Tiriganiaq deposit. Gold mineralization is associated with sheared and sulphidized iron formation, clastic, and mafic volcanic rocks.

A new resource estimate for the Tiriganiaq deposit was released in February 2007. The updated resource incorporates all of the drill results up to 2006. From the surface to 170 m, the limit of a potential open pit (using a cut-off grade of 2.5 g/t gold), the indicated resource is 5 180 300 t at 6.7 g/t gold and the inferred resource is 1 910 300 t at 4.1 g/t gold. The potential underground gold resource below 170 m (6.5 g/t cut-off) is 1 145 000 t at 10.6 g/t gold indicated and 2 884 000 t at 11.4 g/t gold inferred. The total contained ounces of gold are 1 502 900 (indicated) and 1 306 600 (inferred).

Comaplex completed 102 holes in 2007 totaling 21 758 m. Of this amount, 17 holes were for geotechnical purposes for site infrastructure. All of the holes were completed on the Tiriganiaq deposit. In August, Comaplex received final regulatory approval for its underground exploration and bulk sampling program of the Tiriganiaq deposit. Portal excavation began in early August and was completed on October 5. The underground exploration program commenced on October 7. The underground portion of the program is expected to continue for approximately nine months.

KIVALLIQ NICKEL-COPPER-PGE PROJECTS

Ferguson Lake Project

Starfield Resources Inc. owns and operates the Ferguson Lake project, located 160 km south of Baker Lake. Ferguson Lake is a nickel-copper-PGE deposit hosted in tholeiitic gabbro-hornblende layered intrusions. Massive sulphides (bearing nickel, copper, cobalt, platinum, and palladium) occur in lenses over 15.5 km (east-west) of strike. A NI 43-101-compliant mineral resource estimate was released in May 2007, incorporating historical data (173 drill holes) and data collected by Star-

field (1999-2006) totaling 133 214 m of drilling. The indicated resources for the Main West zone are 15.2 Mt grading 0.71% nickel, 1.04% copper, 0.08% cobalt, 1.64 g/t palladium, and 0.28 g/t platinum.

The 2007 drilling program was designed to test the low-sulphide PGE horizon along strike in the Main West zone as the possible location of an open-pit mine. The newly constructed all-season base camp near the Main West zone is now fully operational with airstrip construction to be completed in 2008.

Qikiqtani (Baffin) Region

Most of the current mineral tenure in the Qikiqtani has been selected for its diamond prospectivity. Systematic exploration efforts have resulted in the identification of concentrations of kimberlite indicator minerals, kimberlite float, and *in situ* kimberlite on several properties. The mainland search for uranium in Nunavut spread to Baffin Island in 2007, with prospecting permits acquired over prospective ground on northern Baffin. The Qikiqtani region also hosts Nunavut's largest exploration program: Baffinland Iron Mines' Mary River iron ore project. The company announced a budget of \$90 million to cover 2007 and 2008 activities, including a 250 000-t bulk sample program, camp expansion to a year-round facility with a 200-person capacity, and ongoing geotechnical and exploratory work. The Central Baffin continues to show gold potential. A seventeenth gold occurrence was discovered by Commander Resources along its 140-km greenstone belt near the Dewar Lakes area.

Over 20 projects were reported for the region in 2007. The two former zinc mines in the region, Nanisivik and Polaris, are closed and reclaimed, and are undergoing environmental monitoring.

QIKIQTANI DIAMOND PROJECTS

Aviat

Stornoway Diamond Corp. operates the Aviat joint venture on Melville Peninsula (40 km west of Igloolik), covering 890 000 ha. Drilling in 2007 focused on the Eastern Sheet Complex, with 45 holes (4828 m) completed, 36 of which intersected kimberlite, including the discovery of the AV9 kimberlite pipe. Drilling defined consistent kimberlite intersections within a 1.5-km² area of the sheet complex. Field activities helped to delineate and extend a series of stacked, flat-lying kimberlite sheets up to 7 m thick, enhancing the tonnage potential.

Split core (422 kg) from the newly discovered AV9 pipe has been submitted for caustic fusion analysis to determine preliminary diamond content. Bulk samples totaling 70 t were collected from three kimberlites for dense media separation macrodiamond recovery. Follow-up till sampling was undertaken, with 1177 samples collected for indicator mineral processing and 600 other surface samples acquired for further work.

Brodeur

The Brodeur property is located 100 km northwest of Arctic Bay. Diamond Resources Inc.'s 2007 exploration program consisted of ground geophysics, till and stream sediment sampling, and diamond drilling. A total of 700 line-km of ground magnetics were completed over a 20-km² area. Exploration focused on the Tuwawi and Nanuk kimberlites, as well as on the Kuuriaq kimberlite corridor. The 2200-m diamond drilling program was designed to define the geometry of the Tuwawi kimberlite body and to extract sufficient kimberlite to provide diamond grade and quality estimates. A total of 3110 kg of kimberlite were collected from 12 holes.

In addition to the Tuwawi drilling program, 14 holes were completed over the Nanuk and Kuuriaq targets. Four new kimberlite bodies were intersected at the Nanuk cluster, and the Kuuriaq corridor

was extended to 4 km. A total of 3325 kg of kimberlite from drill samples were collected for caustic fusion processing and diamond recovery.

QIKIQTANI IRON ORE PROJECTS

Mary River

Baffinland Iron Mines Corp. is the sole owner and operator of the Mary River project, located on northern Baffin Island (160 km south of Pond Inlet). Five exposed iron ore deposits (1, 2, 3, 3A and 4) occur in the Mary River area; all are covered by Crown leases first established in the mid-1960s. The current development plan involves Deposit No. 1, with a resource of 337 Mt of ore at an average grade of 66% iron. A definitive feasibility study is expected by February 2008, and Baffinland plans to submit regulatory applications at that time. An Environmental Impact Statement is expected by mid-2008. The definitive feasibility study will build on Aker Kvaerner's 2006 scoping study and will include expansion of the proposed annual output to 18 Mt from 12.6 Mt.

Baffinland has continued exploration and geotechnical drilling, plus environmental, socio-economic and other baseline studies in 2007. Roughly half of the 9338 m of diamond drilling completed in 2007 was for resource delineation purposes, while the balance was geotechnical. The nine holes drilled at Deposit No. 1 this season concentrated on the upper levels of the deposit. Significant intersections of average iron grades ranging from 64.5% to 69.3% were encountered. Two holes yielded values of deleterious elements (sulphur and phosphorous) an order of magnitude lower than had been predicted by 2006 block modeling.

Baffinland has been stepping up exploration of satellite deposits 3 and 3A to eventually add to the mineable reserve. Five broadly spaced holes were drilled at Deposit No. 3 and established continuity of high-grade iron mineralization over 2 km of strike. Intersections returned average iron grades of 65% over 64.3 m and 64% over 32.3 m.

A 250 000-t bulk sample program has commenced at Mary River and is scheduled for completion in 2008. Both hematite and magnetite ore will be mined this winter from two small open pits developed along Deposit No. 1. This material will be blended to provide both lump and fine products intended to be representative of the initial 10-15 years of commercial production. The ore will be shipped in summer 2008 to European steel mills to fully test its metallurgical characteristics on a production scale.

QIKIQTANI GOLD PROJECTS

Baffin Island

Commander Resources Ltd. operates the project located in west-central Baffin Island. The main gold host is iron formation of the Bravo Lake formation (lower Piling group), which is exposed over 140 km. The Bravo Lake formation consists mostly of mafic volcanics and intrusives, plus clastic metasediments and lesser iron formation and sulphidic schist. A new gold discovery in 2007 brings the total known prospects on the belt to 17.

The 2007 drilling program was designed to evaluate priority targets along the 80-km central section of the belt outside of the more advanced zones to gain a better understanding of the potential inventory of prospects requiring more detailed work. The central zones, which were not drilled in 2007, are at a stage where systematic drilling of core mineralized zones is warranted.

A new mineralized trend, Hebert, was discovered in 2007. This trend is 7 km by 2 km, with quartz vein swarms carrying arsenopyrite, pyrrhotite and minor galena. Results from channel samples returned gold values ranging from 0.99 to 5.14 g/t gold.

3. Canadian Global Exploration Activity

3.1 INTRODUCTION

This section provides an overview of Canadian mineral exploration activity²⁴ abroad. It also highlights the domestic and foreign components of the larger-company exploration market in Canada. The information in this review was current as at December 2007. This article continues the previous work of André Lemieux,²⁵ who retired at the end of 2006.

3.2 GLOBAL MARKET FOR MINERAL EXPLORATION

The value of exploration programs expected to be undertaken worldwide in 2007 for precious metals, base metals and diamonds (**Table 17**) reached US\$9.9 billion, up by US\$2.8 billion, or 40%, from the US\$7.1 billion that companies had planned to spend in 2006.²⁶ The value of these programs includes the budgets of the larger companies and those of the smaller companies. It also includes estimates for firms that do not disclose their exploration plans and for firms that were likely to spend less than US\$100 000 in 2007. For the first time, Metals Economics Group has included uranium in its survey of company planned exploration budgets. However, uranium will not be included in this analysis in order to keep the numbers comparable to previous years.

The world's larger companies are defined here as those companies that planned to spend at least US\$3 million annually on mineral exploration in 2007; the world's smaller companies are defined as those companies that planned to spend at least US\$100 000, but less than US\$3.0 million, on mineral exploration in 2007.

The number of companies that reported budgets for mineral exploration of at least US\$100 000 in 2007 increased to 1966, up by 230 firms, or 13%, from 1736 the previous year. As a group these 1966 companies planned to spend US\$9.94 billion in 122 countries, the same as in 2006. Almost 1105 of these companies, or 56%, were based in Canada.

²⁴ Most of the statistical data on the larger-company mineral exploration market are based on *Corporate Exploration Strategies: A Worldwide Analysis*, published annually by Metals Economics Group, Halifax, Nova Scotia. MEG defines exploration as work from the earliest stage through perimeter drilling, reconnaissance, and evaluative forays, as well as work to further quantify and define an identified orebody once the target outline stage has been completed. It includes all feasibility work up to the point of a production decision.

²⁵ Previously this chapter was written by André Lemieux as the summary of an article from the 1995 to 2005 editions of the *Canadian Minerals Yearbook* published by Natural Resources Canada (available on the Internet at www.nrcan.gc.ca/mms/cmy).

²⁶ All currencies in this review are expressed in current U.S. dollars, except for the use of constant dollars in some of the figures. In previous versions of this article, constant U.S. dollars were used.

TABLE 17. WORLDWIDE EXPLORATION BUDGETS FOR PRECIOUS METALS, BASE METALS AND DIAMONDS, BY TYPE OF COMPANY AND BY DOMICILE OF COMPANY, 2007

	Canada	Australia	Africa- Middle East	Europe- FSU	United States	Latin America	Other Asia-Pacific	Total	Proportion of Subtotal
	(\$ millions)								(%)
Larger companies	3 419	1 091	512	1 640	602	512	169	7 945	80
Smaller companies	1 051	470	78	180	129	47	35	1 990	20
Total	4 470	1 561	590	1 820	730	560	205	9 935	100

Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.

Note: (1) "Larger companies" are defined here as those with budgets for mineral exploration in 2007 of \$3.4 million (US\$3 million) or more. Numbers may not add to totals due to rounding.

Compared with the previous year, the budgets of companies that planned to spend at least US\$100 000 on mineral exploration in 2007 increased for about 70% of the countries in which they expected to operate. Aggregate year-over-year company budgets grew by US\$524 million for Canada, by US\$431 million for Australia, by US\$238 million for Russia, by US\$215 million for the United States, by US\$170 million for Mexico, by US\$150 million for Peru, by US\$147 million for Chile, and by US\$110 million for the Democratic Republic of the Congo. As for the 38 countries where exploration budgets were expected to decrease from 2006 to 2007, the largest decrease was by US\$17 million for Mongolia and the second largest decrease was by US\$16 million for Iran. Total lost budgets were a relatively small US\$129 million.

3.3 WORLD'S LARGER COMPANIES

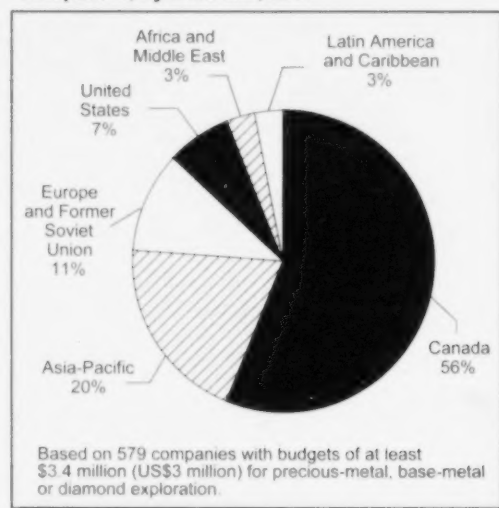
Global trends in mineral exploration are generally based on data for the world's larger companies. The focus of this paper is on this group of companies.

During 2007, the world's larger companies were expected to undertake exploration programs with a combined value of US\$7.945 billion in 77 countries, 2 more than in 2006. The aggregate budgets of the world's larger companies increased by 48%, up from US\$5.381 billion the previous year.

In 2007, the number of companies based around the world that intended to spend at least US\$3.0 million on mineral exploration leaped to 579 (**Figure 43**), a record high for the third year in a row. In 2006, 437 had planned to spend an equivalent amount.

Although, in 2007, the world's 579 larger companies represented 29% of the 1966 companies that reported exploration budgets of at least US\$100 000, they accounted for 80% of the value of their programs (**Table 17**). On a commodity basis, the larger companies accounted for 86% of the value of worldwide programs aimed at diamonds, for 83% of those aimed at base metals, for 83% of those aimed at platinum group metals (PGM), and for 78% of those aimed at gold.

Figure 43
Distribution of the World's Larger Exploration Companies, by Domicile, 2007



Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.

On a regional basis, the world's larger companies accounted for 90% of the value of the exploration programs planned for Europe and the former Soviet Union (FSU), for 87% of those planned for Africa and the Middle East, for 92% of those planned for Latin America and the Caribbean, for 82% of those planned for the United States, for 83% of those planned for other Asia-Pacific countries, for 70% of those planned for Australia, and for 77% of those planned for Canada.

3.4 WORLD'S SMALLER COMPANIES

During 2007, the world's smaller companies were expected to undertake exploration programs around the world with a combined value of US\$1.990 billion. About 22% of the budgets of these companies were expected to be spent in Canada. In 2007, 1387 companies were classified as smaller companies, up from 1299 in 2006. Almost 56% of these companies were based in Canada.

The smaller companies are significant contributors to mineral exploration and development in many regions of the world. In many countries, the smaller companies are the only ones that undertake commercial mineral exploration. In 2007, there were 45 countries where the only firms planning to be active in mineral exploration were smaller companies.

The smaller companies are a significant component of the exploration activity occurring in Australia and in Canada. In 2007, the smaller Canadian-based companies accounted for 24% of the budgets of the smaller and larger Canadian-based companies combined; in Australia, the comparable figure was 30%.

The smaller Canadian companies planned to spend US\$407 million in Canada, or 39% of their worldwide budgets of US\$1051 million; in Australia, the comparable figures were US\$292 million, or 62% of worldwide budgets of US\$470 million.

Although the world's smaller companies accounted for 20% (**Table 17**) of the value of all exploration programs expected to be undertaken worldwide during 2007, their activities will not be analyzed further in this chapter.

3.5 LARGER CANADIAN-BASED COMPANIES

There are more mining companies based in Canada than anywhere else. In 2007, 327 of the world's 579 larger companies were based in this country (**Figure 43**). The previous year, 234 of the 437 larger companies were based in Canada.

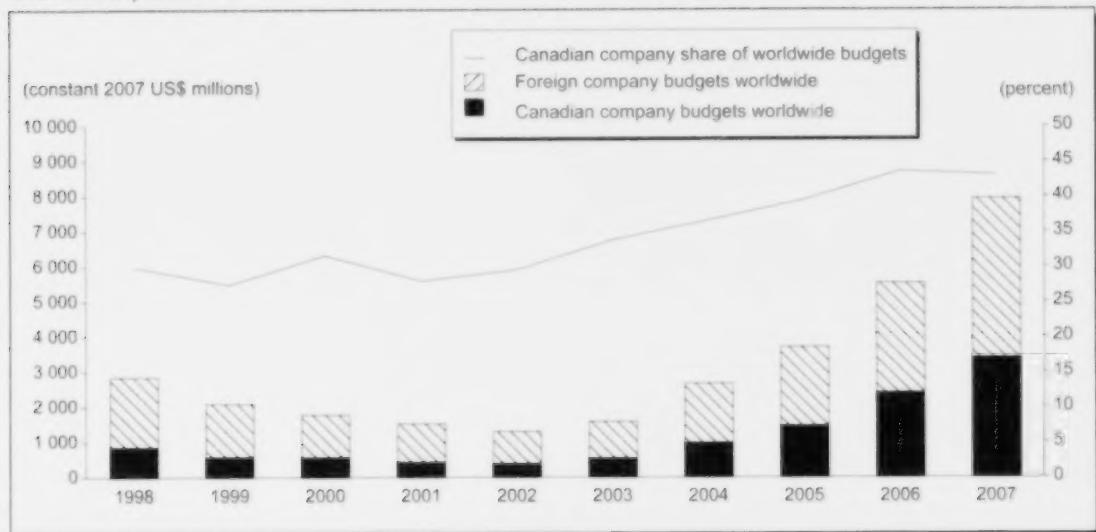
In 2007, the value of the exploration programs that the larger Canadian-based companies planned to undertake in Canada and elsewhere around the world increased to more than US\$3.4 billion (**Figure 44**), up by US\$1076 million, or 46%, from the US\$2.3 billion that they budgeted in 2006.

The larger Canadian-based companies allocated 46% of their budgets to explore for gold, 35% to explore for base metals, 7% to explore for diamonds, and 1% to explore for PGM. The proportion of their budgets allocated to gold was essentially unchanged from 2006, while the proportion allocated to base metals, diamonds and PGM was somewhat less. In comparison, the average world proportions allocated to gold, base metals, diamonds, and PGM in 2007 stood at 41%, 37%, 11%, and 3%, respectively.

The value of the programs that the larger Canadian-based companies planned to undertake during 2007 was 43% of the value of all larger-company exploration programs for the entire world, a slight decrease from 2006. However, adding the value of the programs of the smaller Canadian-based companies to those of the larger ones raises the proportion of the value of exploration programs planned by Canadian-based companies here and abroad to 45% of all the activity expected worldwide.

Figure 44**Exploration Budgets of the World's Larger Companies, by Domicile, 1998-2007**

Companies With Worldwide Budgets of at Least \$3.4 Million in 2007 for Precious-Metal, Base-Metal or Diamond Exploration



Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.

Notes: The worldwide exploration budgets of companies that intended to spend less than \$3.4 million (US\$3 million) in 2007 and an equivalent amount in previous years are excluded. The worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

Canadian companies account for the dominant share, by far, of the value of all mineral exploration programs planned worldwide by the larger companies. In contrast, in 2007, the larger companies based in Africa accounted for 6%, those based in Europe accounted for 14%, those based in Australia accounted for 16%, those based in the United States accounted for 7%, and the Former Soviet Union and South American-based companies each accounted for 5%.

The larger Canadian-based companies typically budget less individually for exploration programs than the industry average worldwide. In 2007, the aggregate exploration budgets of the larger Canadian-based companies had a mean of US\$8.7 million and a median of US\$5.6 million. This compared with global averages of US\$10.1 million and US\$5.9 million, respectively. The largest Canadian mineral exploration budget in 2007 was coincidentally also the world's largest at US\$210 million, budgeted by Ivanhoe Mines Ltd. for Mongolia. The second largest mineral exploration budget by a Canadian-based company in 2007 was US\$95 million by Northern Dynasty Minerals destined for the United States, while the largest budget of a non-Canadian company was US\$155.4 million by Polyus Gold Mining of Russia destined for Russia.

Recognizing that companies of different sizes and based in different regions of the world can have significant variations between exploration budgets and exploration expenditures, the use of aggregate budgets will generally provide a reliable estimate of the total amount that is likely to be spent in the field.

For 2006, 1648 companies based around the world provided data for both their exploration expenditures and for their exploration budgets. Of these 1648 companies, 450 were classified as larger companies and 1198 as smaller companies. In total, these 1648 companies had planned to spend US\$6.660 billion on exploration during 2006. However, by the end of the year, they had actually spent US\$7.302 billion, an increase of \$641 million, or 10%. These 450 larger companies spent US\$204 million more than they had initially planned, or an increase of about 4%. The 1198 smaller

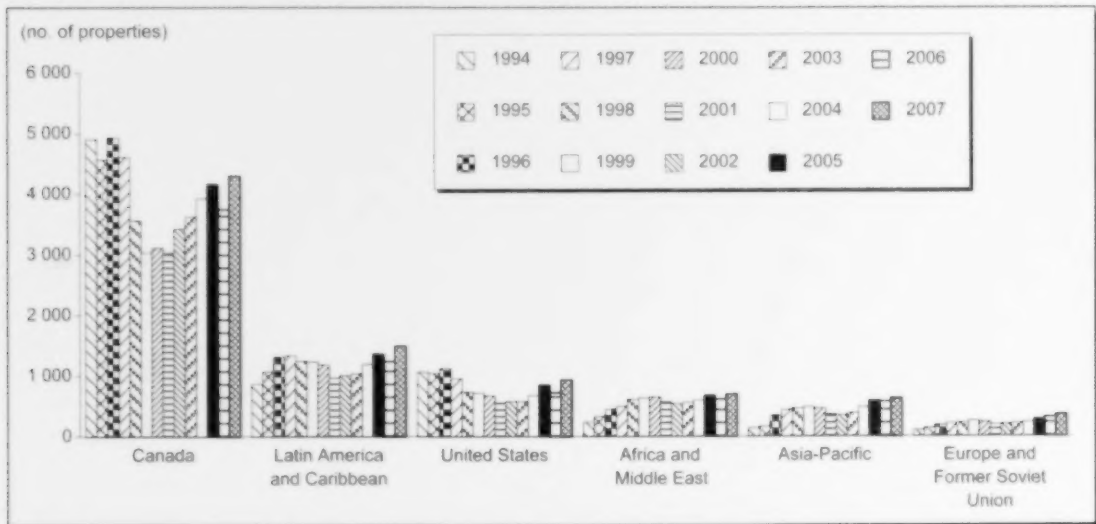
companies spent US\$438 million more than they had initially planned, an increase of almost 38%. In comparison, 244 larger Canadian-based companies under-spent their aggregate budgets of US\$2.309 billion by only US\$3.60 million, or by roughly less than 1%, while 761 smaller Canadian-based companies exceeded their aggregate budgets of US\$733.4 million by US\$270 million, or by more than 37%. In 2006, the departure of expenditures from the budgets of individual companies ranged between US\$17 million under budget and US\$22 million over budget for the larger companies and between US\$3 million under budget and more than US\$12 million over budget for the smaller ones. For most of the larger companies, expenditures that year were within plus or minus \$5 million of the amount budgeted. In comparison, in 2005, the larger Canadian-based companies exceeded their exploration budgets by about 5%.²⁷

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in a portfolio of more than 8300 mineral properties (**Figure 45**) located in Canada or in more than 100 other countries around the world.²⁸ Most of this portfolio consists of properties at the early stages of exploration. The number of properties in which these companies held interests worldwide at the end of 2007 increased by more than 1180, or by more than 16%, compared with the number that they held at the end of the previous year. The portfolio of mineral property interests increased by 18% for properties abroad and by 15% for domestic properties.

²⁷ André Lemieux, "Canada's Global Mining Presence," in the 2005 edition of the *Canadian Minerals Yearbook*, Natural Resources Canada, Ottawa, (www.nrcan.gc.ca/mms/cmy/content/2005/08.pdf).

²⁸ For 1998 through 2007, the data are derived from InfoMine db. These databases are products of Robertson Info-Data Inc. of Vancouver, British Columbia.

Figure 45
Canadian Mineral Property Portfolio Worldwide, by Region, 1994-2007
Companies of All Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA for 1994-97 and InfoMine db for 1998-2007, Robertson Info-Data Inc., Vancouver, British Columbia, and used under licence.

Note: The decrease in properties in Canada after 1997 is due, in part, to the implementation of database features that make it possible to exclude many inactive properties.

3.6 LARGER-COMPANY EXPLORATION MARKET IN CANADA

In 2007, the larger-company mineral exploration market in Canada was valued at US\$1469 million (**Figure 46**), up by over US\$520 million, or 56%, from roughly US\$943 million in 2006. For the sixth year in a row, Canada, in 2007, remained the country where the global mineral exploration industry expected to be the most active. Australia held that position from 1992 through 2001.

In 2007, 164 of the world's larger domestic-based or foreign-based companies planned to explore for minerals in Canada, up from 113 such companies in 2006. During 2007, more than 18% of the exploration efforts of the world's larger companies were expected to take place in Canada, compared with 17.5% in 2006 (**Figure 47**). However, when including the exploration programs of the smaller companies with those of the larger ones, the proportion of the world's total exploration activity planned for Canada in 2007 is 19%, essentially the same as in 2006. (If spending on uranium and by government agencies was included, this percentage would increase to over 21%). At the end of 2007, there were at least 4294 mineral properties with recent exploration activity in this country²⁹ (**Figure 45**), about 543 more properties than at the end of 2006.

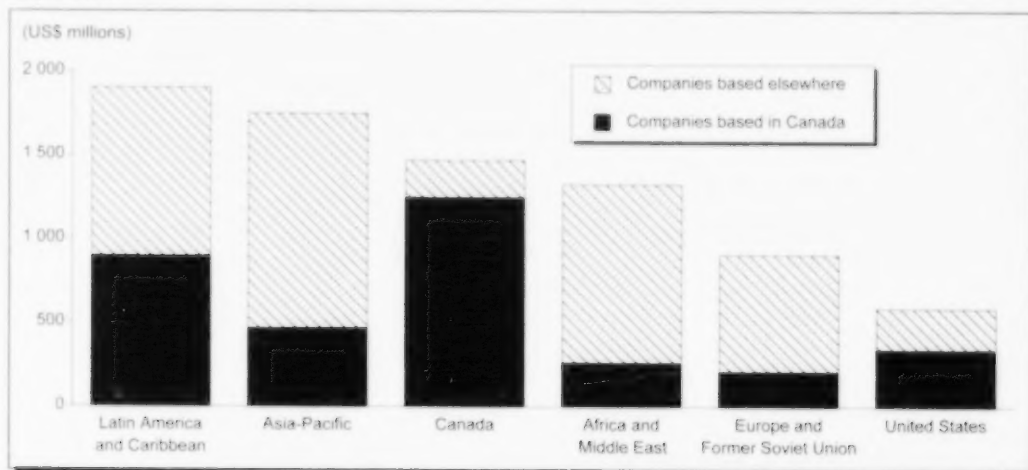
3.6.1 Larger Canadian-Based Companies in Canada

In 2007, 327 of the larger Canadian-based companies allocated, in total, more than US\$1.2 billion for mineral exploration in Canada (**Figure 46**). Their budgets were up by about US\$400 million, or

²⁹ For trends in mineral deposit appraisal activity in Canada over the interval 1982-97, and for a list of projects at the deposit appraisal stage in the late 1990s, see André Lemieux, "Canada's Global Mining Presence," in the 1996 edition of the *Canadian Minerals Yearbook*, Natural Resources Canada, Ottawa, pp. 8.9 and 8.11-8.22 (www.nrcan.gc.ca/mms/cmy/content/1996/08.pdf).

Figure 46

Exploration Budgets of the World's Larger Companies for Selected Regions of the World, 2007
Companies With Worldwide Budgets of at Least \$3.4 Million for Precious-Metal, Base-Metal or Diamond Exploration

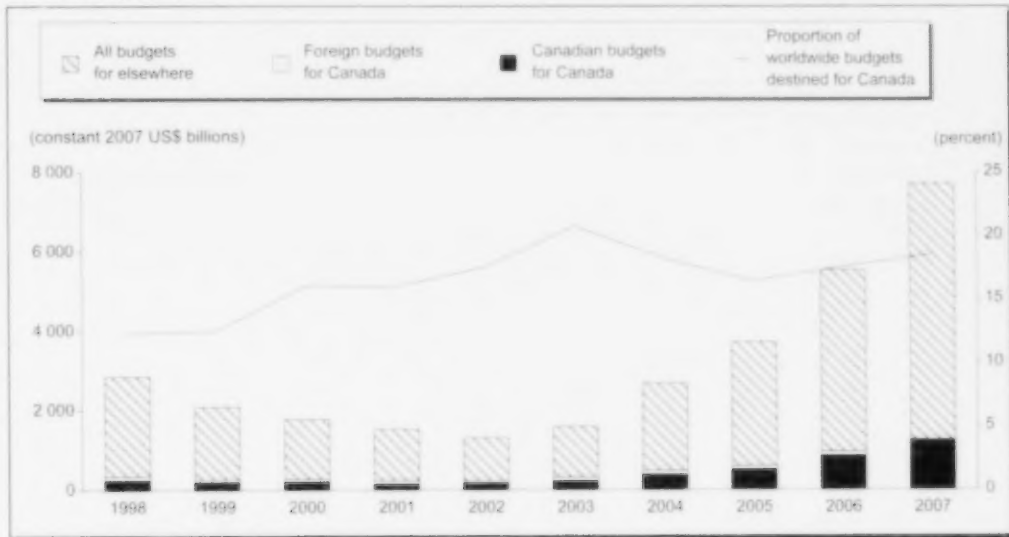


Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.

Notes: The worldwide exploration budgets of companies that intended to spend less than \$3.4 million (US\$3 million) in 2007 are excluded. The worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

Figure 47**Exploration Budgets of the World's Larger Companies for Canada and Elsewhere, 1998-2007**

Companies With Worldwide Budgets of at Least \$3.4 Million in 2007 for Precious-Metal, Base-Metal or Diamond Exploration



Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.

Notes: The worldwide exploration budgets of companies that intended to spend less than \$3.4 million (US\$3 million) in 2007 and an equivalent amount in previous years are excluded. The worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

51%, from the US\$824 million that they allocated in 2006. For the eighth year in a row, Canadian companies planned to spend more on mineral exploration in Canada than they planned to spend in all of the Latin American countries combined.

In previous articles, André Lemieux found that "with increasing globalization, the share of the domestic exploration market controlled by Canadian-based companies generally fell annually as foreign-based companies increased the amount of activity that they undertook in this country." However, in 2006, as in the previous year, the share of the larger-company mineral exploration market controlled by the larger Canadian-based companies grew. It reached over 87% in 2006, up from 83% in 2005. In 2007, the amount dropped to 85%.

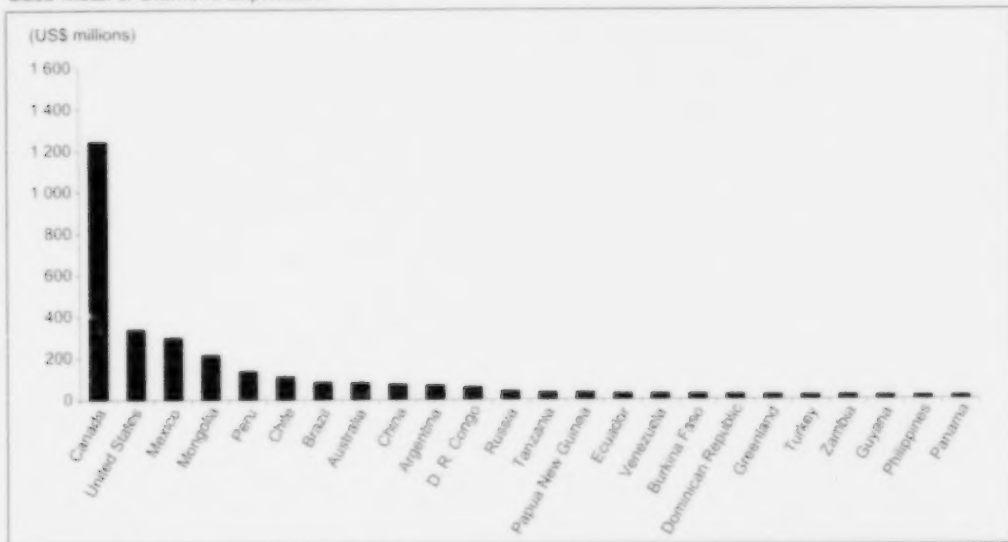
Because mineral exploration is such an international enterprise, the dominance of exploration programs by domestic firms is relatively uncommon. In 2007, there were only seven countries, other than Canada, where domestic companies accounted for more than half of the value of the larger-company market for mineral exploration: Russia (62%), Australia (72%), Sweden (83%), South Africa (52%), and Uzbekistan and Uruguay (each with 100%). Although, during 2007, the larger-company mineral exploration market was valued at US\$998 million in Australia, US\$343 million in South Africa, and US\$596 million in Russia, it was valued at only US\$53 million in Sweden, US\$8 million in Uruguay, and US\$14 million in Uzbekistan.

In 2007, the larger Canadian-based companies allocated 36% of their global exploration budgets to programs in Canada, about 1% more than the previous year. In 1992, that proportion was 57%. In comparison, in 2007, the larger Australian-based companies allocated 57% of their global budgets to domestic exploration, while U.S. companies allocated 35%.

Although Canadian companies operate all over the world, Canada remains the country where they conduct the largest proportion, by far, of their global mineral exploration programs (**Figure 48**).

Figure 48**Exploration Budgets of the Larger Canadian-Based Companies, 2007 – Countries Accounting for 90% of Canadian Budgets**

Companies With Worldwide Budgets of at Least \$3.4 Million for Precious-Metal, Base-Metal or Diamond Exploration



Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.

Notes: The worldwide exploration budgets of companies that intended to spend less than \$3.4 million (US\$3 million) in 2007 are excluded. The worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

3.6.2 Foreign-Based Companies in Canada

During 2007, 16 of the larger foreign-based companies planned to spend, in total, almost US\$224 million on mineral exploration in Canada (**Figure 46**), compared with US\$119 million in 2006. In 2007, foreign-based companies were expected to undertake 15% of all larger-company exploration programs planned for this country. Almost 52% of foreign exploration budgets for Canada were aimed at base metals, and diamonds accounted for 38%.

The larger foreign-based companies active in mineral exploration in Canada in 2007 included the Companhia Vale do Rio Doce (CVRD) based in Brazil; De Beers Group based in Luxembourg; Xstrata plc. based in Switzerland; BHP-Billiton group based in Australia; Newmont Mining based in the United States; and the Anglo American group, Lonmin Plc, and the Rio Tinto group, all based in the United Kingdom.

In 2007, CVRD planned to spend roughly US\$53 million on mineral exploration in Canada. The budget of CVRD was the largest reported for this country for that year. Almost 100% of that budget was directed to base metals.

3.7 LARGER CANADIAN-BASED COMPANIES ABROAD

In 2007, the larger Canadian-based companies planned to spend almost US\$2.2 billion on mineral exploration outside of Canada (**Figure 46**). Their foreign budgets were up by more than US\$654 million, or 43%, from the US\$1.5 billion that they planned to spend in 2006.

Roughly two thirds of the worldwide budgets of the larger Canadian-based companies were allocated to programs abroad in 2007, about the same proportion as in each of the previous five years.

Almost 59% of the 327 larger Canadian-based companies planned to work abroad during 2007. Of these 327 companies, 177 (54%) planned to work only abroad while 15 (5%) planned to work in both Canada and abroad. Only 135 (41%) of the 327 larger Canadian-based companies planned to work only in this country.

Although mining is a global enterprise, undertaking exploration programs in several countries simultaneously is relatively uncommon. In 2007, only 4 (1%) of the 327 larger Canadian-based companies budgeted for programs in five or more countries, 28 (9%) budgeted for programs in two or more countries but in less than five, and 295 (90%) budgeted for programs in only one country.

Smaller companies are less likely to undertake foreign operations than the larger ones. In 2007, almost two thirds of the 778 smaller Canadian-based companies budgeted for work abroad. Of these 778 companies, 360 (46%) planned to work only abroad, 90 (12%) planned to work in both Canada and abroad, and 328 (42%) planned to work only in Canada.

Of the 778 smaller Canadian-based companies, none planned to work in five or more countries, 146 (19%) planned to work in two or more countries but in less than five, and 632 (81%) of them planned to work in a single country.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in a portfolio of almost 4103 mineral properties located abroad (**Figure 45**), up by over 630 properties compared with the number held at the end of the previous year.

Foreign properties represent almost 49% of the total mineral property portfolio held by companies of all sizes listed on Canadian stock exchanges. Apart from the United States, where companies of all sizes listed on Canadian stock exchanges have a substantial mining presence, about 30 other nations, spread across the globe, account for much of the balance of their foreign mineral property portfolio (**Figure 49**).

At the end of 2007, there was at least US\$208 billion worth of new copper, diamond, gold, iron, nickel, PGM, silver, uranium, or zinc-lead mining projects, each with a value of at least US\$112 million, either at the planning, feasibility, construction, or deferred stage of development in Canada or elsewhere around the world, up from US\$97 billion (minimum value of US\$75 million) in 2005.³⁰ Although, at that time, only about 9% of the total value of those projects was expected to be invested in this country, Canadian companies were expected to participate in roughly 20% of all mining investment planned for Canada and the other regions of the globe. In comparison, at the end of 2002, Canadian companies were expected to participate in 27% of the US\$54 billion in new mining projects planned.³¹

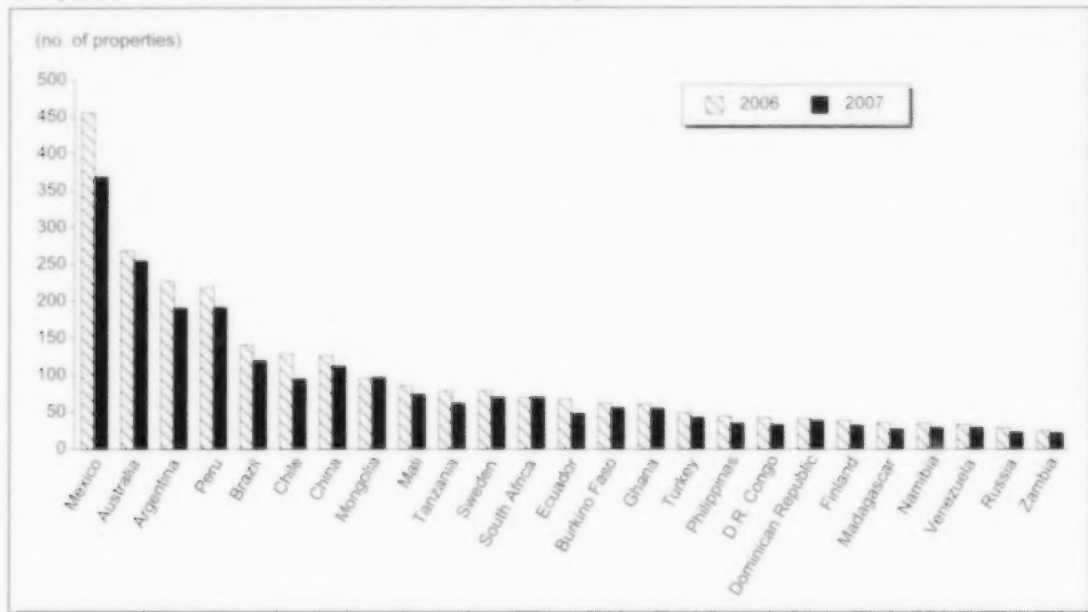
The activities of Canadian mining companies in Canada and abroad have fostered the development in this country of over 2200 suppliers of specialized mining goods and services. Many of these suppliers, such as some drilling companies, export their products all over the world.³²

³⁰ Magnus Ericsson and Anja Olsson, Raw Materials Group, "Project Survey 2007," *Engineering & Mining Journal*, January-February 2007, pp. 28-32.

³¹ André Lemieux, "Canada's Global Mining Presence," in the 2002 edition of the *Canadian Minerals Yearbook*, Natural Resources Canada, Ottawa, pp. 7.6-7.8 (www.nrcan.gc.ca/mms/cmy/content/2002/08.pdf).

³² For a discussion of the global market for mining goods and services, and the role played by Canadian companies, see André Lemieux, *Canadian Suppliers of Mining Goods and Services: Links Between Canadian Mining Companies and Selected Sectors of the Canadian Economy*, Natural Resources Canada, Ottawa, September 2000, 84 pp. (www.nrcan.gc.ca/mms/pdf/minegs_e.pdf).

Figure 49
Canadian Mineral Property Portfolio Abroad, 2006 and 2007 – Countries Accounting for 80% of Canadian Holdings Located Outside the United States in 2007
 Companies of All Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on InfoMine db, Robertson Info-Data Inc., Vancouver, British Columbia, and used under licence.

3.7.1 United States

In 2007, the larger-company mineral exploration market in the United States was valued at US\$589 million (**Figure 46**), or roughly 7% of the US\$7.9 billion larger-company market world-wide. Larger-company budgets for the United States were up by US\$184 million, or by 45%, compared with those of the previous year. Thirty of the larger Canadian-based companies planned to spend, in total, almost US\$341 million in the United States, up from US\$203 million in 2006.

The share of the larger-company mineral exploration market held by Canadian-based companies in the United States in 2007 stood at almost 58%, up from 50% the previous year. The United States reclaimed second place, after Canada, in terms of countries where Canadian companies are the most active in mineral exploration after being in fourth place in 2006 after Canada, Mongolia and Mexico (**Figure 48**).

During 2007, Canadian companies planned to spend a third more than U.S. firms on mineral exploration in the United States. Although U.S. companies accounted for almost 60% of the value of exploration programs in their country in 1992, their activities represented only 36% in 2007.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in 932 mineral properties in the United States (**Figure 45**), roughly 206 more than at the end of the previous year.

Although Canadian companies have considerably expanded their activities in Latin America, Africa, and Asia since the early 1990s, the United States is likely to remain, for the foreseeable future, the foreign country where they hold their largest portfolio of mineral properties. At the end of 2007, the

United States accounted for 11% of all interests in properties held abroad by companies of all sizes listed on Canadian stock exchanges.

3.7.2 Latin America and the Caribbean

In 2007, the larger-company mineral exploration market in Latin America and the Caribbean was valued at US\$1.9 billion (**Figure 46**), or 24% of the US\$7.9 billion larger-company market worldwide. The larger-company mineral exploration market in the region grew by US\$566 million, or 42%. The larger Canadian-based companies planned to spend US\$897 million there, up by more than US\$339 million, or by over 60%, from US\$558 million in 2006.

After Canada, Latin America and the Caribbean is the region of the world where Canadian companies are currently the most active in mineral exploration (**Figure 46**). From 1995 to 1999, Canadian companies spent more on mineral exploration in Latin America and the Caribbean than they did in this country. Over the 12-year period 1991-2002, the global mining industry invested more than US\$7.2 billion (current dollars) in mineral exploration in Latin America and the Caribbean. Companies listed on Canadian stock exchanges made one third of that investment.³³

In 2007, Canadian companies held 47% of the larger-company mineral exploration market in Latin America and the Caribbean, up somewhat from 42% the previous year. The Canadian share is the largest, by far, of all international competitors in the region and amounts to roughly US\$485 million more than domestic companies planned to spend there. The share of the exploration market held by local companies in the region stood at 26% in 2007.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in almost 1494 mineral properties in Latin America and the Caribbean, about 253 more than in 2006 (**Figure 45**).

3.7.2.1 Mexico

In 2007, the larger-company mineral exploration market in Mexico was valued at US\$462 million, or roughly 6% of the US\$7.9 billion larger-company market worldwide. Larger-company budgets for Mexico increased by almost US\$126 million, or by 38%, compared with those of the previous year.

In 2007, Mexico ranked first in Latin America, and third in the world, in terms of countries where Canadian companies are the most active in mineral exploration (**Figure 48**). Thirty-four of the larger Canadian-based companies planned exploration programs for Mexico during 2007. These companies planned to spend, in total, US\$301 million, which represents 65% of the larger-company market in that country.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in about 456 mineral properties in Mexico, almost 90 more than at the end of 2006.³⁴

³³ André Lemieux, *Attracting International Mineral Exploration: The Competitive Position of Peru*, unpublished paper, Natural Resources Canada, Ottawa, March 2002, 37 pp.

³⁴ For the geographic distribution, by state, of mineral properties in which Canadian companies have an interest in Mexico, see André Lemieux, "Canada's Global Mining Presence," in the 2000 edition of the *Canadian Minerals Yearbook*, Natural Resources Canada, Ottawa, pp. 7.7 and 7.8 (www.nrcan.gc.ca/mms/cmy/content/2000/08.pdf).

3.7.2.2 South America

In 2007, the larger-company mineral exploration market in South America was valued at US\$1.3 billion or more than 17% of the US\$7.9 billion larger-company market worldwide. From 2006 to 2007, the larger-company mineral exploration market in the region grew by US\$401 million, or by 42%.

Sixty-nine of the larger Canadian-based companies planned to spend, in total, US\$517 million in South America, US\$186 million more than during the previous year. Their programs accounted for 38% of all larger-company mineral exploration activity planned there, roughly the same proportion as the programs planned by local companies.

Canadian companies held the dominant share of the larger-company mineral exploration market in Colombia, Ecuador, Bolivia, and Guyana. Peru, Chile, Brazil, and Argentina rank fifth, sixth, seventh and tenth, respectively, in the world in terms of countries where Canadian companies are the most active in mineral exploration (**Figure 48**).

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in 918 mineral properties throughout South America, almost 160 more than at the end of the previous year. They held interests in 219 properties in Peru, in 228 in Argentina, in 141 in Brazil, in more than 100 in Chile (129), in more than 60 in Ecuador, and in more than 30 in Venezuela. From 2006 to 2007, the number of mineral properties in which Canadian companies held interests in Argentina grew by 37, the largest year-over-year gain for Canadian companies in the region.

3.7.2.3 Central America

In 2007, the larger-company mineral exploration market in Central America was valued at US\$51 million, or less than 1% of the \$7.9 billion larger-company market worldwide. From 2006 to 2007, the larger-company mineral exploration market grew by US\$8 million, or by 18%. The larger Canadian-based companies planned to spend US\$43 million in the region.

Central America is one of the regions of the world where the smaller companies, and those based in Canada in particular, account for a substantial proportion of the mineral exploration activity that usually takes place there. In 2006, the smaller Canadian-based companies were expected to account for 81% of the \$20 million smaller-company exploration market in that region.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in roughly 75 mineral properties throughout Central America, about the same number as at the end of the previous year. They held interests in more than 20 in Nicaragua and in more than 10 in each of Honduras, Guatemala, and Panama.

3.7.3 Europe and the Former Soviet Union

In 2007, the larger-company mineral exploration market in Europe and the former Soviet Union (FSU) was valued at US\$908 million (**Figure 46**), or 11% of the \$7.9 billion larger-company market worldwide. From 2006 to 2007, the market in the region grew by more than US\$326 million, or by almost 56%. Europe and the FSU experienced the largest year-over-year percentage growth in larger-company exploration budgets of any region. The larger Canadian-based companies planned to spend US\$209 million in the region, about US\$65 million more than they had planned to spend there in 2006.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in roughly 356 mineral properties in Europe and the FSU (**Figure 45**).

3.7.3.1 *Western Europe*

In 2007, the larger-company mineral exploration market in western Europe was valued at US\$119 million, or roughly 1.5% of the \$7.9 billion larger-company market worldwide. From 2006 to 2007, the larger-company mineral exploration market in the region grew by US\$27 million, or 29%. The larger Canadian-based companies planned to spend about US\$58 million in the region, roughly one third more than the amount that they had planned to spend during the previous year.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in almost 186 mineral properties in western Europe. They held interests in 79 properties in Sweden and in roughly 40 properties in Finland and 20 in Spain.

3.7.3.2 *Eastern Europe*

In 2007, the larger-company mineral exploration market in eastern Europe was valued at US\$92 million, or roughly 1% of the \$7.9 billion larger-company market worldwide. From 2006 to 2007, the market in the region grew by US\$27 million. The larger Canadian-based companies planned to spend about US\$65 million there, about twice the amount that they had planned to spend the previous year.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in 97 mineral properties in eastern Europe. They held interests in more than 50 properties in Turkey and in roughly 10 in each of Serbia and Montenegro, Romania, Bulgaria, and Slovakia.

3.7.3.3 *Former Soviet Union*

In 2007, the larger-company mineral exploration market in eight countries of the FSU was valued at US\$697 million,³⁵ or roughly 9% of the \$7.9 billion larger-company market worldwide. The market in the FSU grew by US\$264 million. The larger Canadian-based companies planned to spend US\$85 million in the FSU, up from US\$60 million in 2006.

Larger Canadian companies accounted for all of the large company exploration planned in Armenia and Tajikistan, and for the majority of exploration planned in Kyrgyzstan and Serbia.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in roughly 68 mineral properties in six countries of the FSU. They held interests in roughly 30 properties in Russia and in roughly 25 in Kyrgyzstan.

3.7.4 *Africa and the Middle East*

In 2007, the larger-company mineral exploration market in Africa and the Middle East was valued at US\$1.33 billion (**Figure 46**), or more than 16% of the \$7.9 billion larger-company market worldwide. From 2006 to 2007, exploration budgets for the region grew by more than US\$393 million, or by over 42%. The second smallest growth in large-company exploration budgets occurred in the region. Africa accounts for almost all of the mineral exploration market in Africa and the Middle East.

³⁵ The size of the mineral exploration market in certain regions of the world is underestimated because there are few data available on the extent of exploration programs undertaken by some private enterprises and state agencies.

3.7.4.1 *Africa*

In 2007, the larger-company mineral exploration market in Africa was valued at US\$1.32 billion, or more than 16% of the US\$7.9 billion larger-company market worldwide. From 2006 to 2007, the larger-company market there grew by US\$411 million, or by 45%. The larger Canadian-based companies planned to spend US\$261 million in Africa, equivalent to 20% of the larger company market on that continent. From 2006 to 2007, the larger Canadian-based companies more than doubled their budgets for Africa.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in over 687 mineral properties located in 34 countries on the African continent. From 2006 to 2007, the number of properties in which they held interests grew by over 84. Canadian companies held interests in 86 properties in Mali; 79 in Tanzania; in more than 60 in each of South Africa, Burkina Faso, and Ghana; and in 25 or more in each of the Democratic Republic of Congo, Madagascar, Namibia, and Zambia.

3.7.4.2 *Middle East*

In 2007, the larger-company mineral exploration market in the Middle East was valued at US\$4 million. None of the larger Canadian-based companies planned to explore in that region of the world during 2007.

3.7.5 *Asia-Pacific*

In 2007, the larger-company mineral exploration market in Asia-Pacific was valued at US\$1.7 billion (**Figure 46**), or almost 22% of the US\$7.9 billion larger-company market worldwide. From 2006 to 2007, the larger-company market in the region grew by US\$573 million. The larger Canadian-based companies planned to spend US\$467 million in Asia-Pacific, equivalent to more than 27% of the market there. In 2006, the larger Canadian-based companies had planned to spend US\$439 million in the region.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in more than 626 mineral properties in Asia-Pacific (**Figure 45**), about 50 more than at the end of the previous year.

3.7.5.1 *Southeast Asia*

In 2007, the larger-company mineral exploration market in Southeast Asia was valued at almost US\$228 million, or roughly 3% of the US\$7.9 billion larger-company market worldwide. From 2006 to 2007, the market in the region grew by US\$37 million.

The larger Canadian-based companies planned to spend US\$59 million in the region, about twice the amount that they had planned to spend there in 2006. Aggregate Canadian budgets for individual countries were relatively small. Their largest aggregate budgets were for Papua New Guinea where they planned to spend US\$36 million in total.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in roughly 105 mineral properties in Southeast Asia, slightly more than they held at the end of the previous year. They held interests in about 45 properties in the Philippines and in more than 20 properties in Papua New Guinea and Indonesia.

3.7.5.2 *East Asia*

In 2007, the larger-company mineral exploration market in east Asia, which includes China, Mongolia and South Korea, was valued at US\$490 million,¹² or 6% of the US\$7.9 billion larger-

company market worldwide. From 2006 to 2007, the market in east Asia grew by US\$85 million. The larger Canadian-based companies planned to spend US\$300 million in the region, equivalent to more than 61% of the market there. They had planned to spend about the same amount the previous year.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in almost 226 mineral properties in east Asia. As a result of growing interest in the region, the number of properties in which they held interests increased by 16 compared with the previous year. They held interests in 127 properties in China and in more than 90 in Mongolia (96).

3.7.5.3 South Pacific

In 2007, the larger-company mineral exploration market in the South Pacific was valued at US\$974 million, or almost 12% of the US\$7.9 billion larger-company market worldwide. From 2006 to 2007, the market in the South Pacific grew by US\$446 million. The larger Canadian-based companies planned to spend US\$89 million in the region, about the same as in 2006, and equivalent to 9% of the market there. The majority of their budgets for the region were destined for Australia. Australia ranks eighth in the world in terms of countries where the larger Canadian-based companies are the most active in mineral exploration (**Figure 49**).

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in over 289 properties in the South Pacific, 19 more than at the end of the previous year. Ninety percent of the properties in which Canadian companies have an interest in the region are located in Australia.

3.7.5.4 South Asia

In 2007, the larger-company mineral exploration market in South Asia, which includes India, and Pakistan, was valued at US\$53 million, or less than 1% of the US\$7.9 billion larger-company market worldwide. In 2007, the size of the market in the region grew by almost US\$3 million compared with the previous year.

At the end of 2007, companies of all sizes listed on Canadian stock exchanges held interests in six properties in South Asia. Canadian companies spent US\$19 million in the region accounting for 36% of the total budgets for the area.

3.8 SUMMARY AND OUTLOOK

The year 2007 was another fantastic year of increased planned exploration budgets by mining companies for international and domestic projects. Total world budgeted spending for base metals, precious metals, diamonds and, PGMs reached US\$9.9 billion.

Larger Canadian-based companies planned to spend a total of US\$3.4 billion and smaller Canadian-based companies planned to spend US\$1.1 billion for a total of US\$4.5 billion (45% of the US\$9.9 billion world total and more than for any other country or region surveyed). When including both types of companies, the proportion of the world's total exploration activity planned for Canada in 2007 stood at 19% (excluding uranium).

The US\$3.4 billion planned by larger Canadian-based companies represented 43% of the total US\$7.9 billion budgeted by all larger companies in the world. Thus, the larger Canadian-based companies held a dominant share of mineral exploration programs worldwide.

These Canadian-based larger companies planned to spend 36% (US\$1.25 billion) of their budgets in Canada, 10% (US\$341 million) in the United States, and 9% (US\$301 million) in Mexico.

In total, there were 1105 large and small companies listed on Canadian stock exchanges in Canada in 2007. At the end of 2007, these companies held interests in more than 8300 mineral properties worldwide.

APPENDIX

Historical Exploration and Deposit Appraisal Statistics

INTRODUCTION

This Appendix contains data and analyses that are based on pre-1997 survey definitions when only field and overhead costs were considered. While more restricted by this measure of exploration and deposit appraisal activity, the data are available over a much longer time period. The resulting time series provides useful statistics for studying historical trends in Canadian mineral exploration spending.

HISTORICAL SUMMARY

Figure 50 depicts Canadian exploration and deposit appraisal expenditures (field and overhead costs only) in constant 2006 dollars over the period 1972 to 2006. Above-normal expenditures in the 1980-82 period resulted from high prices for gold, silver, and copper over much of that period. Spending declined somewhat in 1983, but generally rose from 1984 to 1988 as a result of the introduction by the federal government, in 1983, of the Mining Exploration Depletion Allowance (MEDA). MEDA was replaced in 1989 and 1990 by the Canadian Exploration Incentive Program (CEIP). By 1987 and 1988, expenditures had reached unprecedented high levels because of MEDA and the high gold prices that had prevailed until the end of 1987. However, spending fell dramatically after 1988 and decreased until 1992 when it reached its lowest inflation-adjusted level since 1966.

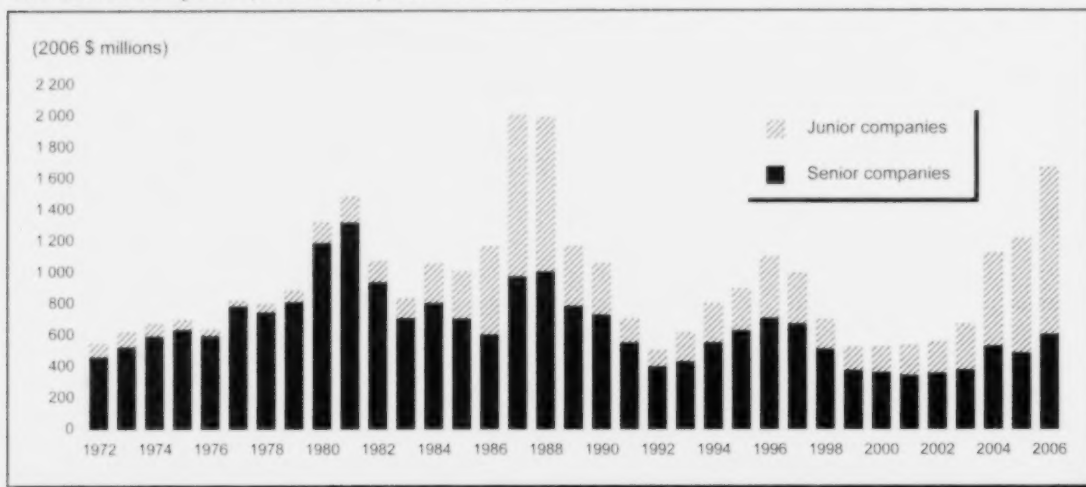
Activity picked up gradually in the 1993-96 period. Expenditures increased by 118% from 1992 to 1996, and the 1996 level of \$1102 million (2006 dollars) was the highest since 1989. Although exploration and deposit appraisal spending declined to \$997 million (2006 dollars) in 1997, it still remained relatively strong by historical standards. However, spending dropped significantly in 1998 to \$704 million (2006 dollars), a decline of 29% from 1997. After another 25% decline, the 1999 total of \$526 million (2006 dollars) represented the second lowest total in almost the past four decades. The recovery began almost imperceptibly in 2000 when field and overhead spending increased by \$2 million and gathered a little momentum in 2001 when spending reached \$536 million (2006 dollars). Data on field and overhead spending for the period 2002-05 show an acceleration of the upward trend as field and overhead spending eventually rose to \$1670 million in 2006.

The relatively higher expenditure levels that were recorded from 1993 to 1997 resulted, to a great extent, from important discoveries of diamonds in Canada's north and nickel-copper-cobalt in Labrador. A combination of factors took over after 1997 to bring Canadian mineral exploration and deposit appraisal activity to dangerously low levels where both the resilience of the Canadian junior mining sector and the ore reserve sustainability of a number of mineral producers were tested. Metal prices constituted the primary factor behind this slide as generally low demand for metals was exacerbated by worldwide economic events (i.e., the Asian financial crisis and the September 2001 terrorist attacks in the United States) and by corporate scandals (e.g., the Bre-X affair).

In this generally negative context, the introduction of exploration tax credits and other measures by the federal government and some provincial/territorial governments was welcome news and

Figure 50

Exploration and Deposit Appraisal Expenditures (1) (Field Work and Overhead) in Canada by Junior and Senior Companies, 1972-2006 (2006 Dollars)



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(1) Includes on-mine-site and off-mine-site activities.

Notes: Total expenditures for 1975-81 are overstated by an average of about 17% relative to earlier and later years because of changes to the methodology used by Statistics Canada over the years. Data for 2006 are final. Expenditures for 1997 to 2006 include both exploration and deposit appraisal costs as per the new survey definitions; up to and including 1996, most of the expenditures now included in the deposit appraisal phase were reported under "exploration."

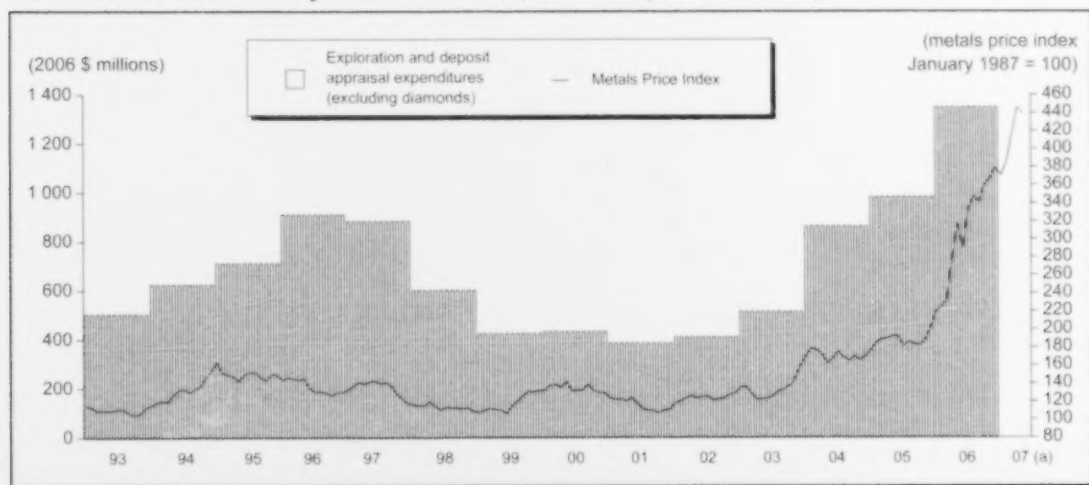
contributed, along with a rapidly improving metals price outlook across a broad range of commodities, to the recent recovery and current effervescence in the Canadian mineral exploration sector.

METAL PRICES AND EXPLORATION AND DEPOSIT APPRAISAL LEVELS

Under normal circumstances, metal prices are probably the most important factor influencing the level of exploration and deposit appraisal activity. In early 1995, metal prices embarked on a generally downward trend, as reflected by Natural Resources Canada's Monthly Metals Price Index (based on the prices of copper, nickel, lead, zinc, silver, and gold), that lasted until mid-1999 (**Figure 51**). The index then recovered for about a year before heading downward again and bottoming out in October 2001, following the September 2001 terrorist attacks in the United States and amid generally low metal prices. The recovery that began afterwards picked up considerable steam in the second half of 2003 and continued towards new heights in 2004 and 2005. In 2006, the Monthly Metals Price Index really took off, reaching an historical high in December. Successive new highs were established in the first four months of 2007 and, in May 2007, NRCan's monthly metals price index was four times as high at that of October 2001.

As outlined in previous editions of this report, there is a relationship between the level of spending in a particular year and metal prices in earlier years. The decreasing trend in metal prices that began in 1995 was not reflected in spending levels before 1997, partly because of that relationship and partly because of expenditures on the search for diamonds, which added an element of stability to exploration and deposit appraisal levels. When excluding diamonds, expenditures (field and overhead costs only) peaked in 1996, started declining in 1997, fell even more in 1998 and 1999, were mostly stable but low in the 2000-2002 period, and began to recover in 2003. They exploded in 2004 after the price outlook really showed signs of improving in the second half of 2003 and continued to improve

Figure 51
Exploration and Deposit Appraisal Expenditures (Field Work and Overhead) in Canada, and Natural Resources Canada's Monthly Metals Price Index, 1993-2007 (Constant Dollars)



Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(a) At press time, no data were available for field and overhead costs in 2007.

Notes: Exploration and deposit appraisal data up to 2006 are final. For comparison with pre-1997 years, the data include only field and overhead expenditures.

greatly as prices continued to head higher and higher, pulling exploration spending towards the records discussed in this report. This relationship outlines the importance of improving metal prices in enticing higher exploration and deposit appraisal spending levels and, based on current metal markets, provides for a favourable short-term outlook.

EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES BY JUNIOR COMPANIES

As shown in **Figure 50**, junior companies have traditionally played an important role in Canadian mineral exploration and deposit appraisal activity. However, their contribution really expanded in 1984, a year after the introduction of MEDA, when their spending accounted for almost 24% of total exploration and deposit appraisal expenditures (field work and overhead). That proportion had more than doubled by 1987 when junior companies accounted for \$1031 million (2006 dollars), or 51%, of the total of \$2.0 billion (2006 dollars) spent during that year. Junior spending was also very important in 1988 with almost 50% (\$987 million) of total expenditures. Their proportion of total spending then started to gradually decrease until it reached 21% in 1992.

The levels of spending recorded by junior companies in the 1986-88 period are even more impressive when taking into account the fact that, during that period, considerable contributions were made by junior companies to joint-venture projects operated by senior companies. In the survey, these contributions were counted as part of senior companies' spending, thus overstating senior expenditures and understating junior expenditures.

On a yearly basis, junior spending accounted for approximately 30% of total expenditures (field work and overhead only) over the period 1993-2000. The discovery of diamonds in Canada's North and of nickel-copper-cobalt at Voisey's Bay were the two most important positive factors affecting junior spending during those years. Low metal prices, a slowing world economy, and difficulties in raising financing explain the more difficult years. The introduction of the federal Investment Tax

Credit for Exploration (ITCE) in October 2000 and related provincial tax credits, around that time and subsequently, was favourable to junior mining companies as their expenditures started to recover faster than those of senior companies. This recovery in junior spending was strong enough to increase their share of total spending (field and overhead costs) to almost 44% in 2003. The momentum continued to build in 2004 as junior mining companies accounted for 53% of all spending, the first time since 1987 (and only the second time in the history of Canadian mineral exploration statistics) that junior spending exceeded that of senior companies. Buoyed by strong metal prices and the eagerness of financial markets to fund mineral exploration activity, junior companies' spending continued to surge at a much faster pace than the expenditures of senior companies in 2005 and 2006. As a result, junior company field and overhead spending represented 60% of total spending in 2005 and 64% in 2006. This percentage is likely to remain strong in 2007 as junior companies continue to dominate the Canadian exploration scene.

EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES BY PROVINCE AND TERRITORY

Tables 18 and 19 show exploration and deposit appraisal expenditures (field and overhead costs only) by province and territory in terms of current dollars and 2006 constant dollars. Both tables cover the period 1992 to 2006, which includes the difficult period after MEDA and CEIP, the exciting discoveries of 1993 and 1994, the ensuing increase in spending up to 1996, the downward trend that brought exploration and deposit appraisal spending down to an almost historical low in 1999, and the latest upward trend that began so slowly in 2000 and has taken expenditures to record levels in 2006.

TABLE 18. EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES (FIELD WORK AND OVERHEAD) IN CANADA, BY PROVINCE AND TERRITORY, 1992-2006 (Current Dollars)

Province/Territory	Total Exploration and Deposit Appraisal (1)														
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	(\$ millions)														
Newfoundland and Labrador	11.1	8.9	12.4	71.1	92.5	58.4	40.8	29.3	23.1	20.7	24.0	21.5	30.5	42.6	87.5
Nova Scotia	3.3	1.8	1.7	2.8	6.9	6.7	4.8	3.6	3.0	1.5	1.8	4.0	6.9	5.6	7.3
New Brunswick	12.2	11.1	10.0	12.7	14.8	12.2	10.0	10.0	12.0	9.4	3.2	2.5	13.2	9.8	13.3
Québec	94.1	106.1	130.3	123.4	137.2	168.6	123.5	103.4	89.9	94.8	104.0	128.0	209.4	199.5	272.7
Ontario	77.4	75.6	113.0	129.7	194.9	176.5	111.3	81.1	113.7	110.2	121.0	187.4	271.1	283.5	330.3
Manitoba	32.0	27.4	40.5	32.6	41.2	40.3	29.5	22.6	27.7	28.5	29.6	27.0	35.7	50.0	51.6
Saskatchewan	25.9	53.1	50.6	43.8	50.6	49.9	57.8	36.0	40.0	34.4	35.2	43.6	63.3	131.0	229.3
Alberta	5.4	7.3	9.4	10.6	10.8	20.5	21.6	11.4	6.1	4.3	5.6	4.6	4.3	5.0	17.3
British Columbia	71.6	66.0	85.0	79.4	104.9	95.8	44.3	33.4	29.9	25.6	34.5	52.6	130.6	164.7	236.2
Yukon	9.7	19.2	25.7	39.3	46.4	40.6	17.5	12.2	9.9	7.3	7.4	11.9	20.8	49.0	99.4
Northwest Territories	42.7	100.7	149.5	172.2	194.5	150.7	114.8	61.0	45.3	75.2	59.8	45.7	99.6	85.3	153.1
Nunavut	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	33.8	57.4	58.1	71.3	85.3	177.7	165.0	172.0
Total field work (excluding overhead)	323.5	410.1	540.5	608.1	835.9	749.5	522.4	387.6	412.3	415.8	434.8	552.7	966.7	1 107.5	1 560.0
Total exploration and deposit appraisal (including overhead)	385.3	477.3	628.1	717.6	894.8	820.2	575.9	437.9	458.1	470.1	497.2	614.2	1 063.0	1 191.0	1 669.9

Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

n.a. Not applicable.

(1) For comparison with pre-1997 years, the data include only field and overhead expenditures. They do not include other related expenditures such as those for engineering, environment and land access.

Notes: Numbers may not add to totals due to rounding. Data are final.

TABLE 19. EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES (FIELD WORK AND OVERHEAD) IN CANADA, BY PROVINCE AND TERRITORY, 1992-2006 (2006 Dollars)

Province/Territory	Total Exploration and Deposit Appraisal (1)														
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	(2006 \$ millions)														
Newfoundland and Labrador	14.6	11.5	15.9	88.9	113.9	71.0	49.9	35.2	26.6	23.6	27.1	23.5	32.3	43.6	87.5
Nova Scotia	4.3	2.3	2.2	3.5	8.5	8.1	5.9	4.3	3.5	1.7	2.0	4.4	7.3	5.7	7.3
New Brunswick	16.0	14.4	12.8	15.9	18.2	14.8	12.2	12.0	13.8	10.7	3.6	2.7	14.0	10.0	13.3
Quebec	123.6	137.2	166.6	154.3	169.0	204.9	150.9	124.2	103.7	108.1	117.3	139.8	221.6	204.2	272.7
Ontario	101.6	97.8	144.5	162.2	240.0	214.5	136.0	97.4	131.1	125.7	136.5	204.6	286.9	290.2	330.3
Manitoba	42.0	35.4	51.8	40.8	50.7	49.0	36.1	27.1	31.9	32.5	33.4	29.5	37.8	51.2	51.6
Saskatchewan	34.0	68.7	64.7	54.8	62.3	60.7	70.6	43.2	46.1	39.2	39.7	47.6	67.0	134.1	229.3
Alberta	7.1	9.4	12.0	13.3	13.3	24.9	26.4	13.7	7.0	4.9	6.3	5.0	4.6	5.1	17.3
British Columbia	94.0	85.4	108.7	99.3	129.2	116.4	54.1	40.1	34.5	29.2	38.9	57.4	138.2	168.6	236.2
Yukon	12.7	24.8	32.9	49.1	57.1	49.4	21.4	14.7	11.4	8.3	8.3	13.0	22.0	50.2	99.4
Northwest Territories	56.1	130.3	191.2	215.3	239.5	183.2	140.3	73.3	52.2	85.8	67.5	49.9	105.4	87.3	153.1
Nunavut	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	40.6	66.2	66.3	80.4	93.1	188.0	168.9	172.0
Total field work (excluding overhead)	424.8	530.5	691.3	760.5	1 029.4	911.0	638.4	465.6	475.5	474.2	490.5	603.5	1 022.9	1 133.6	1 560.0
Total exploration and deposit appraisal (including overhead)	506.0	617.4	803.3	897.4	1 101.9	997.0	703.8	526.0	528.4	536.2	560.8	670.7	1 124.8	1 219.1	1 669.9

Source: Natural Resources Canada, based on the Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

n.a. Not applicable

(1) For comparison with pre-1997 years, the data include only field and overhead expenditures. They do not include other related expenditures such as those for engineering, environment and land access.

Notes: Numbers may not add to totals due to rounding. Data are final.

